

**STATEMENT OF BASIS (AI No. 40486)**

for draft Louisiana Pollutant Discharge Elimination System permit No. LA0108936 to discharge to waters of the State of Louisiana.

**THE APPLICANT IS:** AMCOL Health & Beauty Solutions, Inc.  
301 Laser Lane  
Lafayette, Louisiana 70507

**ISSUING OFFICE:** Louisiana Department of Environmental Quality (LDEQ)  
Office of Environmental Services  
Post Office Box 4312  
Baton Rouge, Louisiana 70821-4312

**PREPARED BY:** Sonja Loyd  
Water Permits Division  
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**DATE PREPARED:** March 15, 2007

**1. PERMIT STATUS**

A. Reason For Permit Action:

Permit reissuance of an expired Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term.

B. LPDES Permit: Effective date - October 1, 1999  
Expiration date - September 30, 2004

C. LPDES Multi-Sector General Permit (LAR05M140):  
Effective date - May 1, 2006  
Issuance date - May 23, 2006  
Expiration date - April 30, 2011  
Non-process area stormwater and firewater discharges are covered under the MSGP.

D. Date Application Received: A permit renewal application was received on September 28, 2004. Supplemental information necessary to complete the permitting process was received on April 10, 2006, May 25, 2006, June 27, 2006, June 28, 2006, July 26, 2006, August 3, 2006, October 9, 2006, and March 14, 2007.

**2. FACILITY INFORMATION**

A. FACILITY TYPE/ACTIVITY - acrylate copolymers manufacturing facility

The permittee operates an existing specialty polymers manufacturing facility. Acrylate copolymers are produced by mixing toluene, acetone, and isopropyl alcohol with monomers such as methyl methacrylate. These polymers are utilized in skin care, cosmetics, pharmaceuticals, and industrial applications.

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This facility discharges treated process wastewater, process area stormwater, process area washdown water, and laboratory wastewater (Outfall 001); cooling tower blowdown (Outfall 002); and once-through non-contact cooling water and once-through non-contact boiler steam condensate (Outfall 003). All sanitary wastewater discharges are connected to the City of Lafayette Publicly Owned Treatment Works (POTW).

This facility also has a boiler blowdown wastestream. However, this wastestream is not permitted to be discharged to State waters due to the red color of the wastestream caused by the rust residue from the boiler. (NOTE: The red rust residue is created when the blowdown which contains deionized water reacts with the carbon jacket on the boiler tank.) Currently, this facility is routing the boiler blowdown discharges to a tank for ultimate disposal at a landfill.

**B. FEE RATE**

1. Fee Rating Facility Type: Minor
2. Complexity Type: VI
3. Wastewater Type: II
4. SIC code: 2821

**C. LOCATION** - 301 Laser Lane in Lafayette, Lafayette Parish  
(Latitude 30°16'14", Longitude 92°01'51")

**D. Technology Basis** - 40 CFR Chapter I, Subchapter N (Effluent Guidelines and Standards) parts 401 and 405 - 471 have been adopted by reference at LAC 33:IX.4903.

<u>Guideline</u>	<u>Reference</u>
Organic Chemicals, Plastics, and Synthetic Fibers	40 CFR 414, Subpart D and J

Other Sources of Technology Based Limits:

Current LPDES permit (effective October 1, 1999)

Light Commercial Facilities General Permit (LAG480000)

Best Professional Judgement

**3. OUTFALL INFORMATION**

Outfall 001

Discharge Type: Combined treated process wastewater, process area stormwater, process area washdown water, and laboratory wastewater

Treatment: Blending, stripping, filtering, flocculation, and pH adjustment

Location: At the point of discharge from the treatment facility located in the southwest corner of the facility along the property fence line prior to combining with other waters (Latitude 30°16'12", Longitude 92°01'52")

Flow: Continuous, 0.0151 MGD, 30-Day Maximum

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Discharge Route: Industrial Park drainage ditch, thence to an unnamed coulee, thence to Francois Coulee, thence to the Vermilion River

#### Outfall 002

Discharge Type: Cooling tower blowdown

Treatment: None

Location: At the point of discharge located between the plant building and the cooling tower prior to combining with other waters (Latitude 30°16'12", Longitude 92°01'51")

Flow: 0.0164 MGD, 30-Day Maximum

Discharge Route: Industrial Park drainage ditch, thence to an unnamed coulee, thence to Francois Coulee, thence to the Vermilion River

#### Outfall 003

Discharge Type: Once-through non-contact cooling water and once-through non-contact boiler steam condensate

Treatment: None

Location: At the point of discharge located in the southwest corner of the main facility prior to combining with other waters (Latitude 30°16'14", Longitude 92°01'50")

Flow: 0.0107 MGD, 30-Day Maximum

Discharge Route: Industrial Park drainage ditch, thence to an unnamed coulee, thence to Francois Coulee, thence to the Vermilion River

#### **4. RECEIVING WATERS**

STREAM - Industrial Park drainage ditch, thence to an unnamed coulee, thence to Francois Coulee, thence to the Vermilion River

- A. TSS (15%), mg/L: 19.30
- B. Average Hardness, mg/L  $\text{CaCO}_3$ : 84.64
- C. Critical Flow, cfs: 0.0 (NOTE: A default value of 0.1 cfs was used for the water quality screening.)
- D. Mixing Zone Fraction: 1
- E. Harmonic Mean Flow, cfs: 1.0 (NOTE: A default value of 1.0 was used for the water quality screening.)
- F. River Basin and Subsegment: Vermilion-Teche River, Subsegment No. 060801
- G. Designated Uses:  
The designated uses are primary contact recreation, secondary contact recreation, propagation of fish and wildlife, and agriculture

Information based on the following: LAC 33:IX.Chapter 11 and memorandum from Brian Baker to Sonja Loyd dated August 11, 2006.

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## 5. CURRENT EFFLUENT LIMITS

See APPENDIX D - LPDES permit limits

## 6. PROPOSED CHANGES

A. The permittee's name changed from Advanced Polymer Systems, Inc. to AMCOL Health & Beauty Solutions, Inc.

### B. Outfall 001

The wastestream description has been modified to include process area washdown water.

The method of treatment has been modified to reflect: blending, stripping, filtering, flocculation, and pH adjustment. Biological treatment is no longer being used as a method of treatment.

The permittee requested that the monitoring frequency for flow be changed from once per month using an estimate to a continuous discharge using a recorder.

The daily maximum and monthly average mass limits for BOD<sub>5</sub> and TSS are based on the effluent guidelines under 40 CFR 414, Subpart D. The limits established in the current LPDES permit have been revised due to a recalculation of the limits based on the current flow rate provided by the permittee. See Appendix A.

The daily maximum and monthly average mass limits for the toxic pollutants are based on the effluent guidelines under 40 CFR 414, Subpart J (No End-of-Pipe Biological Treatment). In the current permit, the mass limits for these pollutants were based on 40 CFR 414, Subpart I (End-of-Pipe Biological Treatment). Mass limits using Subpart J have been applied based upon information from the permittee which indicated that biological treatment is no longer being used as a method of treatment.

Based on the applicable effluent guidelines for the toxic pollutants under 40 CFR 414 (Subpart J), the limits and monitoring requirements for 2-Chlorophenol and 2,4-Dichlorophenol have been removed from the draft permit since these pollutants are not listed as parameters under this subpart.

The monitoring frequency for the toxic pollutants that have demonstrated a non-detect sample value during the monitoring period of April 2004 through December 2006 have been changed to reflect once per year in lieu of once per six months. A monitoring frequency of once per six months for Phenol, 1,2-Dichloroethane, and Toluene will be retained from the current LPDES permit based on data demonstrating the presence of these pollutants.

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The sample type for BOD<sub>5</sub>, TSS, and the toxic pollutants (with the exception of Phenol) will be changed from grab to a 24-hour Composite sample since a continuous flow rate is being proposed for discharges at this outfall.

A water quality-based daily maximum and monthly average mass limit for Total Zinc has been established in the draft permit as the result of a reasonable potential analysis. A three year compliance schedule has been incorporated into the draft permit to allow the permittee adequate time to achieve compliance with the water quality-based limits in accordance with LAC 33:IX.1109.D.1. The monitoring frequency for Total Zinc will be once per quarter using a 24-hour Composite sample.

The outfall sampling location has been changed to read as follows: "At the point of discharge from the treatment facility located in the southwest corner of the facility along the property fence line prior to combining with other waters"

The monitoring frequency for pH has been changed from once per month to continuously. Part II conditions for monitoring pH continuously have been added to the draft permit.

#### C. Outfalls 002 and 003

The reporting requirement for TDS at Outfalls 002 and 003 has been removed from the draft permit by BPJ based on the water quality screening in APPENDIX B-2 and B-3. The water quality screening was performed using the 95<sup>th</sup> percentile calculated from TDS sample data (APPENDIX C) reported on the permittee's DMRs for the period of January 2005 through December 2006 which demonstrated that the permittee's discharges have no reasonable potential to violate the water quality standards for this pollutant.

A daily maximum concentration limit for Total Residual Chlorine (TRC) at Outfall 002 has been added to the draft permit since chlorine-containing compounds are used as anti-biofouling agents. This limit has been established by BPJ based on the Light Commercial Facilities General Permit (LAG480000) and standard practices for permitting this wastestream type. The monitoring frequency is once per month using a grab sample.

The sample type for visual sheen at Outfall 003 has been changed to reflect "observation" instead of "grab" based on standard permitting practices.

The outfall sampling locations for Outfalls 002 and 003 has been changed to read as follows:

Outfall 002, At the point of discharge located between the plant building and the cooling tower prior to combining with other waters

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Outfall 003, At the point of discharge located in the southwest corner of the main facility prior to combining with other waters

- D. The facility discharges to a Water Quality Act 303(d) stream. Therefore, a reopener clause has been added to Part II of the draft permit in the event that the permit requires reassessment regarding 303(d) status resulting in incorporation of the results of any modifications to the TMDL report for the receiving water body.

## 7. PROPOSED EFFLUENT LIMITS

Outfall 001 - Combined treated process wastewater, process area stormwater, process area washdown water, and laboratory wastewater

Parameter	Monthly Average	Daily Maximum	Frequency	Sample Type	Reference
FLOW-MGD	Report	Report	Continuous	Recorder	LAC 33:IX.2707
BOD <sub>5</sub>	3 lbs/day	8 lbs/day	1/month	24-hour Composite	40 CFR 414.41; Current LPDES permit
TSS	5 lbs/day	16 lbs/day	1/month	24-hour Composite	40 CFR 414.41; Current LPDES permit
Total Zinc (*1)	Report (lbs/day)	Report (lbs/day)	1/quarter	24-hour Composite	Water Quality Screening
Volatile Compounds (*2)	See Appendix A	See Appendix A	1/year	24-hour Composite	40 CFR 414.101
Acid Compounds (*2), (*3)	See Appendix A	See Appendix A	1/year	24-hour Composite	40 CFR 414.101
Base/Neutral Compounds	See Appendix A	See Appendix A	1/year	24-hour Composite	40 CFR 414.101
pH Range Excursions	---	0 (*4)	Continuous	Recorder	(*4)

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Parameter	Monthly Average	Daily Maximum	Frequency	Sample Type	Reference
No. of Events >60 minutes					
pH Range Excursions Monthly Total Accumulated Time in Minutes	---	446(*4)	Continuous	Recorder	(*4)
pH (Standard Units)	Report(*4) (Min)	Report(*4) (Max)	Continuous	Recorder	(*4)

(\*1) In accordance with LAC 33:IX.1109.D.1, this Office has granted the permittee three years after the effective date of the permit to achieve compliance with the water quality-based limits for Total Zinc. Thereafter, the water quality-based mass limits for Total Zinc in APPENDIX B-1 shall apply.

(\*2) The monitoring frequency of once per six months will be retained from the current LPDES permit for Phenol, 1,2-Dichloroethane, and Toluene.

(\*3) The "grab" sample type for Phenol will be retained from the current LPDES permit in accordance with 40 CFR 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants).

(\*4) The pH shall be within a range of 6.0 - 9.0 Standard Units at all times subject to the continuous monitoring pH range excursion provision in Part II, Paragraph I of the draft permit. This requirement has been added based on LDEQ guidance for outfalls that have continuous discharges.

**Outfall 002** - Cooling tower blowdown

Parameter	Monthly Average	Daily Maximum	Frequency	Sample Type	Reference
FLOW-MGD	Report	Report	1/month	Estimate	Current LPDES permit
TOC	---	50 mg/L	1/month	Grab	Current LPDES permit
TRC (*1)	---	0.2 mg/L	1/month	Grab	BPJ; LAG480000
Oil and	---	15 mg/L	1/month	Grab	Current LPDES

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Parameter	Monthly Average	Daily Maximum	Frequency	Sample Type	Reference
Grease					permit
Temperature (°F)	---	Report	1/month	Grab	Current LPDES permit
pH	6.0 S.U. (min)	9.0 S.U. (max)	1/month	Grab	Current LPDES permit

(\*1) Limit and monitoring for Total Residual Chlorine (TRC) are required only if chlorine or a chlorine compound is used as an anti-biofouling agent.

**Outfall 003** - once-through non-contact cooling water and once-through non-contact boiler steam condensate

Parameter	Monthly Average	Daily Maximum	Frequency	Sample Type	Reference
FLOW-MGD	Report	Report	1/month	Estimate	Current LPDES permit
Temperature (°F)	---	Report	1/month	Grab	Current LPDES permit
Visible Sheen	None	None	1/month	Observation	Current LPDES permit
pH	6.0 S.U. (min)	9.0 S.U. (max)	1/month	Grab	Current LPDES permit

## 8. WATER QUALITY BASED LIMITS

Sample data from the 2004 Application, July 26, 2006 and August 3, 2006 email correspondences, and June 6, 2007 95<sup>th</sup> Percentile calculations (APPENDIX C) were screened against state water quality numerical standard based limits by following guidance procedures established in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001.

In accordance with LAC 33:IX.2707.D.1/40 CFR § 122.44(d)(1), the existing discharge was evaluated in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001, to determine whether pollutants would be discharged "at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." Calculations, results, and documentation are given in APPENDIX B.



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The following pollutant received water quality-based limits at Outfall 001:

Total Zinc

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are set at the values listed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. They are also listed in Part II of the permit.

#### 9. COMPLIANCE HISTORY/DMR REVIEW

- A. There are no open, appealed, or pending enforcement actions. However, on December 7, 2006, this facility caused or allowed an unauthorized discharge of boiler cleaning wastewater to State waters. This wastewater was generated as a result of the facility's boiler cleaning activities. The wastewater was also red in color due to the rust residue from the boiler.
- B. A DMR review of the monitoring reports for the period of April 2004 through December 2006 revealed the following effluent violations (the permittee did not collect samples for Outfalls 002 and 003 for the monitoring period of June and November 2005):

Date	Parameter	Sample Value	Permit Limit	Outfall
07/05	TOC	106 mg/L	50 mg/L	002
05/05	TOC	107 mg/L	50 mg/L	002
03/05	TOC	113 mg/L	50 mg/L	002
02/05	TOC	74 mg/L	50 mg/L	002

[NOTE: No DMRs for the calendar year of 2005 could be located in the main files for those parameters at Outfall 001 that specify a semi-annual monitoring frequency.]

- C. The most recent inspection was performed on October 9, 2006. The following items of concern were noted in the inspection report:
- (1) A DMR review for the monitoring period of January 2005 through June 2006 revealed four effluent violations for TOC at Outfall 002.
  - (2) Overflow from the cooling tower was discharging onto the ground. According to the permittee, this wastestream will be piped into the cooling tower blowdown discharges at Outfall 002.

#### 10. ENDANGERED SPECIES

The receiving waterbody, Subsegment No. 060801 of the Vermilion-Teche River Basin, is not listed in Section II.2 of the Implementation Strategy as

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requiring consultation with the U.S. Fish and Wildlife (FWS). This strategy was submitted with a letter dated September 29, 2006 from Watson (FWS) to Brown (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

#### **11. HISTORIC SITES**

The discharges are from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

#### **12. TENTATIVE DETERMINATION**

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in the application.

#### **13. PUBLIC NOTICES**

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the statement of basis. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper(s) of general circulation

Office of Environmental Services Public Notice Mailing List

#### **14. TMDL WATERBODY**

Subsegment No. 060801 of the Vermilion-Teche River Basin is listed on the Final 2004 Integrated 303(d) List as being impaired with nitrogen, organic enrichment/low Dissolved Oxygen (DO), pathogen indicators, suspended solids/siltation, and carbofuran.

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A Total Maximum Daily Loading (TMDL) Assessment has been completed for the following pollutants:

Nitrogen and Organic enrichment/low DO

The Vermilion River TMDL for Dissolved Oxygen and Nitrogen was finalized on April 5, 2001. This TMDL did not provide for more stringent limits than those already in place by the Department. These limits apply to sanitary dischargers and process outfalls for food and seafood processors. Daily maximum and monthly average technology-based mass limits for BOD<sub>5</sub> have been established in the draft permit to ensure that the integrity of the receiving stream is maintained.

Pathogen Indicators

The Vermilion TMDL for Fecal Coliform was finalized on April 5, 2001. In accordance with the report, this TMDL applies to sanitary dischargers only and "...there will be no change in the permit requirements based upon a wasteload allocation resulting from this TMDL." The permittee discharges sanitary wastewater directly to the City of Lafayette Publicly Owned Treatment Works (POTW); therefore, no fecal coliform limits have been placed in the draft permit.

Suspended solids/Turbidity/Siltation

As per the TMDL for TSS, Turbidity, and Siltation for the 15 Subsegments in the Vermilion River Basin (Final May 2, 2002), point source loads are so small as to be insignificant, and because effective policies are in place to limit TSS discharges, no specific reductions from point sources are required. Daily maximum and monthly average technology-based mass limits for TSS have been established in the draft permit to ensure that the integrity of the receiving stream is maintained.

Carbofuran

The TMDL for the Pesticide Carbofuran in the Mermentau and Vermilion-Teche River Basins (Final March 21, 2002) does not give an allocation to point sources because there are no known point source discharges of Carbofuran in the Mermentau Basin and only one point source in the Vermilion-Teche Basin (FMC Corporation) that discharges Carbofuran.

## APPENDIX A

Revised 03/27/02

LA0108936, AI No. 40486 Appendix A-1

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06/07/2007 Calculation of Technology Based Limits for AMCOL Health &amp; Beauty Solutions, Inc.

(*1)		TABLE 1					
Permittee:	AMCOL Health & Beauty Solutions, Inc.						
Permit Number:	LA0108936, AI No. 40486	(*3)	Fraction of OCPSF Conc. or BPJ {}				
Appendix	Appendix A-1	Fract =0, {}=1	0	BOD,avg	BOD,max	TSS,avg	TSS,max
{ Flow Basis 1=proc, 0=all	0	Miscellaneous WW		0.5	0.5	0.5	0.5
Concentration flow, (MGD)	---	Misc. WW, mg/L		5	10	10	20
GL vs Old,0=n,1=y,2=GL+Old	1	Utility WW		0.25	0.25	0.25	0.25
Outfall number	Out. 001	Utility WW, mg/L		5	10	10	20
Deepwell fract., 40 CFR 122.50		Sanitary, mg/L		30	45	30	45
Conversion Factors:							
(*2)		(*4)				Conv mg/L-->lbs/da	8.34
OCPSF Subpart I=1, J=2	2	Metal+CN Flows:	MGD	gpm		Conv ug/L-->mg/L:	0.0001
OCPSF PROCESS FLOW CALCULATION:	MGD	Total Chromium				Conv gpm-->MGD:	0.00144
Process water	0.0151	Total Copper			(*8)		
		Total Lead			OCPSF Alternate Flows:	MGD	
		Total Nickel			Conventionals:		
		Total Zinc			Organic Toxics:	---	
		Total Cyanide			Process Waste Water		
					Process Stormwater		
		(*5)			(*9)		
		OCPSF Guideline	Prod.	Prod.	Page and Table Numbering		
		Subpart:	1000 lbs	Fraction	1=y, 0=n		
			per day	of Total	1st Input Page		1
		B, Rayon Fibers			2nd Input Page		0
		C, Other Fibers			OCPSF		1
TOTAL PROCESS FLOW:	0.0151	D,Thermoplastic Resins		1	SS Metals		0
		E,Thermosetting Resins			Inorganic		0
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	F, Commodity Organics			Fertilizer		0
		G, Bulk Organics			Pesticides		0
SANITARY WW:		H, Specialty Organics			COD/TOC/O&G Tbl		0
		Total:	---	1	BOD/TSS Tbl		1
					Table Designation Sequence		
		(*6)			Pesticides &OCPSF		0
		COD & TOC Ratios: Average Maximum			PestMetal 1-y,0=n		0
MISCELLANEOUS:	MGD	COD/BOD5 ratio					
		TOC/BOD5 ratio			Flow (*10)		
		COD,TOC, O&G {}:	Average	Maximum	MGD	COD and TOC limits, precalc	
		COD, mg/L			---	COD,Avg (lbs/day)	0
		TOC, mg/L			---	COD,Max (lbs/day)	0
TOTAL MISCELLANEOUS FLOWS:	---	O&G, mg/L			---	TOC,Avg (lbs/day)	0
						TOC,Max (lbs/day)	0
UTILITY WASTEWATER:	MGD	(*7)					
		INORGANIC GUIDELINES:					
		New Source 1=y 0=n	0	Prod.		OCPSF BOD5	
		O Fraction=0, {}=1	0	1000 lbs	Flow	Flow	OCPSF Fraction
		40 CFR 415		per day	MGD	gpm	Avg Max
		40 CFR 415.63 Mercury					1 1
		40 CFR 415.63 Diaphragm					1 1
							1 1
TOTAL UTILITY WW FLOWS:	---						1 1
TOTAL OCPSF+BPJ FLOW:	0.0151					OCPSF+Inorganic	0.0151

## Calculation of Technology Based Limits for AMCOL Health &amp; Beauty Solutions, Inc.

Out. 001

Conventional pollutant loading calculations, BOD5 and TSS

TABLE 2

Calculation of BOD5, and TSS limits:

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF GL 40 CFR 414	BOD5	BOD5	TSS	TSS	Prod.	Prod.	Process	Conv.	BOD5	BOD5	TSS	TSS
Subpart:	Avg	Max	Avg	Max	1000 lbs	Fraction	Flow	Factor	Avg	Max	Avg	Max
	mg/L	mg/L	mg/L	mg/L	per day	of Total	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
B, Rayon Fibers							---	8.34	---	---	---	---
C, Other Fibers							---	8.34	---	---	---	---
D, Thermoplastic Resins	24	64	40	130		1	0.0151	8.34	3.022416	8.059776	5.03736	16.37142
E, Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics							---	8.34	---	---	---	---
G, Bulk Organics							---	8.34	---	---	---	---
H, Specialty Organics							---	8.34	---	---	---	---
Total/Weighted[]	24	64	40	130		1	0.0151	8.34	3.022416	8.059776	5.03736	16.37142
BPJ Sources/Guidelines	BOD5	BOD5	TSS	TSS				Conv.	BOD5	BOD5	TSS	TSS
	Avg	Max	Avg	Max			Flow	Factor	Avg	Max	Avg	Max
BPJ Sources:	mg/L	mg/L	mg/L	mg/L			(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
Sanitary WW:							---	8.34	---	---	---	---
Miscellaneous:							---	8.34	---	---	---	---
Utility Wastewater:							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
BPJ Source Total:							---		---	---	---	---
Other Guidelines:	BOD5	BOD5	TSS	TSS	Prod.	Flow to		Conv.	BOD5	BOD5	TSS	TSS
Inorganic	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow	Factor	Avg	Max	Avg	Max
40 CFR 415	mg/L	mg/L	lbs/1000	lbs/1000	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
	BOD5	BOD5	TSS	TSS	Prod.	Flow to			BOD5	BOD5	TSS	TSS
	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow		Avg	Max	Avg	Max
	lbs/1000	lbs/1000	lbs/1000	lbs/1000	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
							---		---	---	---	---
							---		---	---	---	---
							---		---	---	---	---
Other Guideline Total (lbs/day)							---		---	---	---	---
BOD5/TSS Grand Total (lbs/day)							0.0151		3.022416	8.059776	5.03736	16.37142

## Calculation of Technology Based Limits for AMCOL Health &amp; Beauty Solutions, Inc.

Out. 001

TABLE 3

## Calculation Summary of Conventional and Non-Conventional Limits

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Parameter	G/L-BPJ	G/L-BPJ	Process	G/L-BPJ	G/L-BPJ	Tech Old	Tech Old	Anti-Back	Out. 001	Out. 001	Out. 001	Out. 001
	Avg.	Max	Flow	Avg	Max	Avg	Max	0=no scr.	Avg	Max	Avg	Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day	1=Old vs GL	lbs/day	lbs/day	mg/L	mg/L
CONVENTIONAL								2=Old+GL				
BOD5				3.022416	8.059776			---	3	8	---	---
TSS				5.03736	16.37142			---	5	16	---	---
Oil and Grease				---	---			---	---	---	---	---
NON-CONVENTIONAL												
COD				---	---			---	---	---	---	---
TOC				---	---			---	---	---	---	---
TRC				---	---			---	---	---	---	---
Ammonia Nitrogen				---	---			---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---
Nitrate Nitrogen				---	---			---	---	---	---	---

## Calculation Summary of Metal and Cyanide Toxic Limits

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Parameter	G/L-BPJ	G/L-BPJ	Process	G/L-BPJ	G/L-BPJ	Tech Old	Tech Old	Anti-Back	Out. 001	Out. 001	Out. 001	Out. 001
	Avg.	Max	Flow	Avg	Max	Avg	Max	0=no scr.	Avg	Max	Avg	Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day	1=Old vs GL	lbs/day	lbs/day	mg/L	mg/L
METALS AND CYANIDE								2=Old+GL				
Total Chromium				---	---			---	---	---	---	---
Total Copper				---	---			---	---	---	---	---
Total Lead				---	---			---	---	---	---	---
Total Nickel				---	---			---	---	---	---	---
Total Zinc				---	---			---	---	---	---	---
Total Mercury				---	---			---	---	---	---	---
Total Cyanide				---	---			---	---	---	---	---
Amenable Cyanide				---	---			---	---	---	---	---

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Calculation of Technology Based Limits for AMCOL Health &amp; Beauty Solutions, Inc.

Out. 001

Calculation of Toxic Limits, OCPSF Subpart J

TABLE 4

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF Parameter	G/L Val	G/L Val	Process G/L Val	G/L Val	G/L Val	Tech Old Tech Old	G/L-BPJ	Out.	001 Out.	001 Out.	001 Out.	001
Subpart J	Avg.	Max	Flow	Avg	Max	Avg	Max0=no scr.	Avg	Max	Avg	Max	Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day1=OldvsGL	lbs/day	lbs/day	mg/L	mg/L	mg/L
							2=Old+GL					
VOLATILE COMPOUNDS												
Acrylonitrile	0.094	0.232	0.0151	0.011838	0.029217			---	0.012	0.029	---	---
Benzene	0.057	0.134	0.0151	0.007178	0.016875			---	0.007	0.017	---	---
Carbon Tetrachloride	0.142	0.38	0.0151	0.017883	0.047855			---	0.018	0.048	---	---
Chlorobenzene	0.142	0.38	0.0151	0.017883	0.047855			---	0.018	0.048	---	---
Chloroethane	0.11	0.295	0.0151	0.013853	0.037151			---	0.014	0.037	---	---
Chloroform	0.111	0.325	0.0151	0.013979	0.040929			---	0.014	0.041	---	---
1,1-Dichloroethane	0.022	0.059	0.0151	0.002771	0.00743			---	0.003	0.007	---	---
1,2-Dichloroethane	0.18	0.574	0.0151	0.022668	0.072286			---	0.023	0.072	---	---
1,1-Dichloroethylene	0.022	0.06	0.0151	0.002771	0.007556			---	0.003	0.008	---	---
1,2-trans-Dichloro-ethylene	0.025	0.066	0.0151	0.003148	0.008312			---	0.003	0.008	---	---
1,2-Dichloropropane	0.196	0.794	0.0151	0.024683	0.099992			---	0.025	0.100	---	---
1,3-Dichloropropylene	0.196	0.794	0.0151	0.024683	0.099992			---	0.025	0.100	---	---
Ethylbenzene	0.142	0.38	0.0151	0.017883	0.047855			---	0.018	0.048	---	---
Methyl Chloride	0.11	0.295	0.0151	0.013853	0.037151			---	0.014	0.037	---	---
Methylene Chloride	0.036	0.17	0.0151	0.004534	0.021409			---	0.005	0.021	---	---
Tetrachloroethylene	0.052	0.164	0.0151	0.006549	0.020653			---	0.007	0.021	---	---
Toluene	0.028	0.074	0.0151	0.003526	0.009319			---	0.004	0.009	---	---
1,1,1-Trichloroethane	0.022	0.059	0.0151	0.002771	0.00743			---	0.003	0.007	---	---
1,1,2-Trichloroethane	0.032	0.127	0.0151	0.00403	0.015994			---	0.004	0.016	---	---
Trichloroethylene	0.026	0.069	0.0151	0.003274	0.008689			---	0.003	0.009	---	---
Vinyl Chloride	0.097	0.172	0.0151	0.012216	0.021661			---	0.012	0.022	---	---
ACID COMPOUNDS												
2-Chlorophenol												
2,4-Dichlorophenol												
2,4-Dimethylphenol	0.019	0.047	0.0151	0.002393	0.005919			---	0.002	0.006	---	---
4,6-Dinitro-o-cresol	0.078	0.277	0.0151	0.009823	0.034884			---	0.010	0.035	---	---
2,4-Dinitrophenol	1.207	4.291	0.0151	0.152002	0.540383			---	0.152	0.540	---	---
2-Nitrophenol	0.065	0.231	0.0151	0.008186	0.029091			---	0.008	0.029	---	---
4-Nitrophenol	0.162	0.576	0.0151	0.020401	0.072538			---	0.020	0.073	---	---
Phenol	0.019	0.047	0.0151	0.002393	0.005919			---	0.002	0.006	---	---



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## Calculation of Technology Based Limits for AMCOL Health &amp; Beauty Solutions, Inc.

Out. 001

## Calculation of Toxic Limits, OCPSF Subpart J

TABLE 4

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF Parameter	G/L Val	G/L Val	Process G/L Val	G/L Val	G/L Val	Tech Old Tech	Old Anti-Back	Out. 001	Out. 001	Out. 001	Out. 001	Out. 001
Subpart J	Avg.	Max	Flow	Avg	Max	Avg	Max0=no scr.	Avg	Max	Avg	Max	Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day1=OldvsGL	lbs/day	lbs/day	mg/L	mg/L	mg/L
2=Old+GL												
BASE/NEUTRAL COMPOUNDS												
Acenaphthene	0.019	0.047	0.0151	0.002393	0.005919			---	0.002	0.006	---	---
Acenaphthylene	0.019	0.047	0.0151	0.002393	0.005919			---	0.002	0.006	---	---
Anthracene	0.019	0.047	0.0151	0.002393	0.005919			---	0.002	0.006	---	---
Benzo(a)anthracene	0.019	0.047	0.0151	0.002393	0.005919			---	0.002	0.006	---	---
Benzo(a)pyrene	0.02	0.048	0.0151	0.002519	0.006045			---	0.003	0.006	---	---
3,4-Benzofluoranthene	0.02	0.048	0.0151	0.002519	0.006045			---	0.003	0.006	---	---
Benzo(k)fluoranthene	0.019	0.047	0.0151	0.002393	0.005919			---	0.002	0.006	---	---
Bis(2-ethylhexyl)- phthalate	0.095	0.258	0.0151	0.011964	0.032491			---	0.012	0.032	---	---
Chrysene	0.019	0.047	0.0151	0.002393	0.005919			---	0.002	0.006	---	---
1,2-Dichlorobenzene	0.196	0.794	0.0151	0.024683	0.099992			---	0.025	0.100	---	---
1,3-Dichlorobenzene	0.142	0.38	0.0151	0.017883	0.047855			---	0.018	0.048	---	---
1,4-Dichlorobenzene	0.142	0.38	0.0151	0.017883	0.047855			---	0.018	0.048	---	---
Diethyl phthalate	0.046	0.113	0.0151	0.005793	0.014231			---	0.006	0.014	---	---
Dimethyl phthalate	0.019	0.047	0.0151	0.002393	0.005919			---	0.002	0.006	---	---
Di-n-butyl phthalate	0.02	0.043	0.0151	0.002519	0.005415			---	0.003	0.005	---	---
2,4-Dinitrotoluene												
2,6-Dinitrotoluene												
Fluoranthene	0.022	0.054	0.0151	0.002771	0.0068			---	0.003	0.007	---	---
Fluorene	0.019	0.047	0.0151	0.002393	0.005919			---	0.002	0.006	---	---
Hexachlorobenzene	0.196	0.794	0.0151	0.024683	0.099992			---	0.025	0.100	---	---
Hexachlorobutadiene	0.142	0.38	0.0151	0.017883	0.047855			---	0.018	0.048	---	---
Hexachloroethane	0.196	0.794	0.0151	0.024683	0.099992			---	0.025	0.100	---	---
Naphthalene	0.019	0.047	0.0151	0.002393	0.005919			---	0.002	0.006	---	---
Nitrobenzene	2.237	6.402	0.0151	0.281714	0.806229			---	0.282	0.806	---	---
Phenanthrene	0.019	0.047	0.0151	0.002393	0.005919			---	0.002	0.006	---	---
Pyrene	0.02	0.048	0.0151	0.002519	0.006045			---	0.003	0.006	---	---
1,2,4-Trichlorobenzene	0.196	0.794	0.0151	0.024683	0.099992			---	0.025	0.100	---	---

## APPENDIX A-2 LA0108936, AI No. 40486

Documentation and Explanation of Technology Calculations  
and Associated Lotus Spreadsheet

This is a technology spreadsheet covering the following guideline: 40 CFR 414, Subparts D and J, Organic Chemicals, Plastics, and Synthetic Fibers. Regulations at 40 CFR 144(a)/LAC 33.IX.2707 require that technology-based permit limitations be placed in permits based on effluent limitations guidelines where applicable, on Best Professional Judgement (BPJ) in the absence of guidelines or on a combination of the two. Best Available Technology Economically Achievable (BAT) guideline factors and concentrations are used for non-conventional and toxic pollutants. In the absence of BAT, Best Conventional Pollutant Control Technology (BCT) is used for non-conventional pollutants. In the absence of either BAT or BCT, Best Practicable Control Technology (BPT) is used for conventional and non-conventional pollutants. BPT is used for conventional pollutants. New Source Performance Standards (NSPS) are used as the situation dictates, however in the case of the OCPSF guidelines, NSPS=BAT. In the absence of an applicable guideline for a particular parameter, BPJ shall be utilized. The term, "monthly average" or "average", refers to the 30-day monthly average of daily maximum values, "daily maximum" or "maximum", refers to the maximum for any one day. The term, "previous permit", refers to the most recently issued NPDES or LPDES permit. If the previous permit did not give a BPJ allowance for particular wastewater, none will be granted in the reissuance in accordance with CWA 402(o), and 40 CFR 122.44.1/LAC 33.IX.2707.L. The spreadsheet is set up in a table and column/section format. Each table represents a general category for data input or calculation points. Each reference column or section is marked by a set of parentheses enclosing a number and asterisk, for example (\*1) or (\*10). These columns or sections represent inputs, existing data sets, calculation points, or results for determining technology based limits for an effluent of concern.

Table 1

Table 1 is the data input area for flow information associated with the above mentioned guidelines and the inorganic chemical guidelines, Sections (\*2), (\*3), (\*4), (\*5), (\*6), (\*7), (\*8), (\*10), and (\*11). The Page and Table numbering sequence section is Section (\*9) and the generalized input information is Section (\*1).

(\*1) General input information:

Permittee - permittee name.

Permit Number- LPDES permit number.

Appendix- Appendix designation for the header.

[ ] Flow Basis 1=proc, 0=all- if the flow basis for concentration limits is the same as the process flow in determining mass limits, then a "1" is placed in the designated cell. A "0" indicates the total outfall flow will be used in determining concentration based limits. See Concentration flow (MGD).

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Concentration flow (MGD)- flow used for calculating concentration based limits in MGD.

GL vs Old, 0=n, 1=y, 2=GL+Old- this is the anti-backsliding (40 CFR 122.44.1, LAC 33.IX.2707.L) screening designation switch. "Old" represents the previous permit limit established by Best Professional Judgement (BPJ), which is now BAT for that facility, and "GL" represents the current guideline calculation. If the screen indicates that the previously established limitation is more stringent, but there has been an increase in production, another spreadsheet can be run giving guideline allowances for the production increase by putting a "2" in the specified cell. This cell sets a default for all anti-backsliding throughout the spreadsheet, but different options can be selected on a parameter specific basis.

Outfall number- Outfall number is placed in the designated cell, the default is "Out. 001", abbreviated due to space limitations in other portions of the spreadsheet.

Deepwell fract., 40 CFR 122.50/LAC 33:IX.2717- this applies to any situation where a discharger that falls under mass based guidelines or mass based BPJ and is discharging a portion of their wastewater to a surface water receiving stream and the remaining portion to a deepwell (most common in La.), POTW, offsite disposal, etc. The facility's mass based limitations must be reduced by the fraction of water not being discharged to the surface water receiving the discharge. Flow based guideline effluent limitations and associated BPJ will receive adjustments in their source flows.

- (\*2) Flow Calculations- Flow calculations are divided into four basic categories, 1) process, 2) sanitary wastewater, 3) miscellaneous flows, and 4) utility wastewater. Additional flows may be entered as needed. Flows can either be entered as MGD or gpm units in the designated column. The process flow is used to calculate organic toxic limitations if the facility's annual production exceeds 5 million pounds per year of final product. Process flow includes flows generated by the manufacturing process, process area stormwater, and process lab water as stated in 40 CFR 414. Other flows, such as groundwater remediation wastewater, are considered as process wastewaters on a BPJ basis. Additional flows such as utility, sanitary, and miscellaneous wastewaters are used in determining additional BPJ allocations for BOD<sub>5</sub> and TSS limitations, but not toxics. Miscellaneous wastewater includes, but is not limited to, wastewaters from tank farms or chemical storage areas or uncontaminated stormwater. Utility wastewater includes, but is not limited to, non-contact cooling tower blowdown, boiler blowdown, filter backwash, etc.
- (\*3) Fraction of OCPSF Conc. or BPJ []. Utility, Miscellaneous and other wastewaters contribute BOD<sub>5</sub> and TSS loadings to the process outfall if these wastewaters are discharged through the process outfall. For miscellaneous wastewaters, a BPJ determination has been made that these

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wastewaters receive 50% of the production weighted OCPSF concentrations for BOD<sub>5</sub> and TSS. For utility wastewaters, a BPJ determination has been made that these wastewaters receive 50% of the production weighted OCPSF concentrations for BOD<sub>5</sub> and TSS. Sanitary wastewaters shall receive BOD<sub>5</sub> and TSS allocations of 30 mg/L, average, and 45 mg/L, maximum, as treatment equivalent to secondary treatment (LAC 33.IX.711.D). Other wastewaters shall be approached on a case-by-case basis. Anti-backsliding concerns and/or a previous permit may preclude the usage of the weighted OCPSF concentrations described above. Different BOD<sub>5</sub> and TSS fractions may be used as the situation dictates. If the previous permit contains other concentrations, they may be utilized instead of fractions of production weighted OCPSF concentrations.

- (\*4) Metal+CN Flow- The OCPSF guidelines specify that only a specific metal bearing wastestream shall receive allowances under the guideline (40 CFR 414.90, 414.100). However, through experience, it has been determined that there are several other potential sources of metals through out a facility other than from a catalyst in a metal bearing wastestream especially in an acidic wastestream. Examples of these sources include reaction vessels and equipment, piping, cooling towers, boilers, raw contaminants, etc. In consideration of these factors, the whole toxics process flow is utilized per BPJ in the calculation of metal limits unless anti-backsliding concerns (40 CFR 122.44.1, LAC 33.IX.2707.L) and/or a previous permit prescribe the use of a lesser flow. For situations where site-specific metal bearing flows (BPJ and OCPSF guideline) need to be calculated, the "Site-Specific Metal, Cyanide, and Total Residual Chlorine (TRC) Bearing Flows" table is used. Flow is entered in MGD or gpm under the specified column on the row(s) containing the metal(s) of concern.
- (\*5) OCPSF Guideline Subpart- BOD<sub>5</sub> and TSS mass limitations are calculated using a production weighted concentration. Organic chemical production figures in 1000/lbs day or production fractions of the total may be entered on the row(s) with the indicated subpart under the designated column. The production fraction will be used more frequently as many companies consider production information confidential. If a facility manufactures under only one subpart, then the production fraction shall be unity (1).
- (\*6) COD & TOC Ratios/COD, TOC, O&G []- Under the ratio section, it may be necessary to determine COD or TOC BPJ loadings based on BOD<sub>5</sub> limitations or loadings. The appropriate ratios are entered in the indicated cells. BPJ loadings for COD, TOC, and Oil and Grease (O&G) may also be determined on a concentration basis. Concentrations and flows are entered in the indicated cells. The ratios/concentrations are usually based on the previously issued permit, if one exists. If this is a new permit issuance or major modification involving a new unit, then the ratios/concentrations are usually based on similarly permitted facilities.
- (\*7) Inorganic Effluent Guidelines (40 CFR 415)- Inorganic guideline subpart and associated production and flow are entered as indicated. Chlor-Alkali

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guidelines (40 CFR 415.63) are present by default since chlor-alkali operations are most frequently associated with the production of organic chemicals (chlorinated solvents, vinyl chloride monomer, etc.). New sources are indicated by placing a "1" or a "0" in the indicated cell. O Fraction=0, []=1, indicates whether the BPJ BOD<sub>5</sub> allocation fraction is entered in terms of weighted OCPSF concentrations, indicated by a "0", or other concentration under the labeled columns, indicated by a "1". Production information is entered in terms of 1000 lbs per day. Flow is entered in MGD or gpm in the appropriate column. Other inorganic guideline input information is included on a case-by-case basis.

- (\*8) OCPSF Alternate Flows- On a case-by-case basis it may be necessary to utilize an alternate flow for the calculation of the conventional pollutants BOD<sub>5</sub> and TSS loadings or the calculation of the organic toxic loadings. This will most commonly occur in cases where a deepwell is being eliminated. Units are in MGD.
- (\*9) Page and Table numbering sequence- This section shall be used for all guideline calculations and combinations. The user can specify that the spreadsheet number the pages and tables in accordance with the guidelines/tables being used. Unused pages and tables are numbered "0". This section also controls the printing of the spreadsheet; non-numbered pages are not printed.
- (\*10) Precalculated COD and TOC limits- Occasionally it may be necessary to incorporate a precalculated technology-based limit for TOC or COD based on DMR's or other sources, such as a previously issued permit. These values are entered in the designated cells.
- (\*11) Inorganic Flow Sources- Although flow is not used in calculating mass limits under the inorganic effluent guidelines, these flows are sometimes used in allocating BPJ loadings or for informational purposes.

Table 2

Table 2 is a calculation table for the conventional pollutant loadings of BOD<sub>5</sub> and TSS utilizing guidelines and BPJ.

- (\*1) The top portion of the table lists OCPSF subparts under 40 CFR 414. The bottom portion indicated by "Other Sources/Guidelines" lists non-guideline BPJ sources, sanitary wastewater, non-process area stormwater, miscellaneous wastewaters, utility wastewaters, under "Other Sources" and other contributing guidelines under "Other Guidelines".
- (\*2) Average BOD<sub>5</sub>- Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic allocations are made by BPJ.

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- (\*3) Maximum BOD<sub>5</sub>- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic allocations are made by BPJ.
- (\*4) Average TSS- Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.
- (\*5) Maximum TSS- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.
- (\*6) Production in 1000 lbs/day- These values indicate the amount of production per subpart.
- (\*7) At the top of the table, Production fraction of total. These values are based on a fraction of total OCPSF production per subpart. If all OCPSF manufacturing falls under one subpart, the fraction shall be unity (1).

At the bottom of the table, Flow to Treatment Plant Fraction. Applicable to mass-based guidelines; if a portion of a process wastewater is being injected to a deepwell, POTW, or other non-surface water source, this represents the remaining fraction being discharged to the receiving water.

- (\*8) Flow- For the OCPSF guideline portion of the table (the upper portion), this is the process flow calculated in Table 1. Under "BPJ Sources/Guidelines", these are the other categorical BPJ flows calculated in Table 1. Under the "Other Guideline" section, this is the flow associated with the production under that guideline part or subpart. Flows associated with mass-based guidelines are not used in calculations.
- (\*9) Conversion factor- used in conjunction with flow (MGD) for converting mg/L to lbs per day, 8.34 lbs/gallon. Mg/L is assumed to be equivalent to ppm.
- (\*10) BOD<sub>5</sub>, Average, lbs/day- For OCPSF guideline allocations the concentration in column (\*2) is multiplied by the production fraction in column (\*7), the flow in column (\*8), the conversion factor in column (\*9) yielding a monthly average BOD<sub>5</sub> loading applicable to that subpart. BPJ Source allocations are determined similarly to the OCPSF guideline allocations. If mass-based guidelines are being considered under Other Guidelines", the guideline factor in column (\*2) is multiplied by the production value in (\*6), and the flow to treatment plant fraction in column (\*7) if there is deepwell, POTW, or other disposal of process wastewater not to a surface water receiving stream. Inorganic wastewaters receive a BOD<sub>5</sub> allocation provided that anti-backsliding does not apply. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted[]." The BPJ Sources loadings including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are

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summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average BOD<sub>5</sub>.

- (\*11) BOD<sub>5</sub>, Maximum, lbs/day- Similar to column (\*10). See column (\*10).
- (\*12) TSS, Average, lbs/day- For OCPSF guideline allocations the concentration in column (\*4) is multiplied by the production fraction in column (\*7), the flow in column (\*8), the conversion factor in column (\*9) yielding a monthly average BOD<sub>5</sub> loading applicable to that subpart. BPJ Source allocations are determined similarly to the OCPSF guideline allocations. If mass-based guidelines are being considered under Other Guidelines", the guideline factor in column (\*4) is multiplied by the production value in (\*6), and the flow to treatment plant fraction in column (\*7) if there is deepwell, POTW, or other disposal of process wastewater not to a surface water receiving stream. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted[]." The BPJ Sources loadings including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average TSS.
- (\*13) TSS, Maximum, lbs/day- Similar to column (\*12). See column (\*12).

Table 3

Table 3 includes calculations for the heavy metals, Total Chromium, Total Copper, Total Lead, Total Nickel, Total Zinc, Total Cyanide, Total Mercury, Total Residual Chlorine (TRC), and Amenable Cyanide utilizing BAT, NSPS, or BPJ as indicated.

- (\*1) Subcategory and/or Source- This specifies the applicable guideline subpart, subcategory, or BPJ source. When site-specific OCPSF metal limits are being calculated, the categorical source will be displayed: process wastewater, miscellaneous and utility wastewater, and non-ocpsf wastewater.
- (\*2) Average (parameter) guideline factor (lbs/1000 lbs daily production), or BPJ concentration (mg/L). Parameter is the indicated metal, cyanide, or TRC. BPJ concentrations for TRC are usually 0.9 mg/L, average, from the Inorganic Chemicals Development Document (Phase I) pg. 183, EPA 440/1-82/007, associated with chlor-alkali production.
- (\*3) Maximum (parameter) guideline factor (lbs/1000 lbs daily production), BPJ concentration (mg/L). Parameter is the indicated metal, cyanide, or TRC. BPJ concentrations for TRC are usually 1.5 mg/L, maximum, from the Inorganic Chemicals Development Document (Phase I) pg. 183, EPA 440/1-82/007, associated with chlor-alkali production.
- (\*4) Same as (\*2).

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- (\*5) Same as (\*3).
- (\*6) Production in 1000 lbs/day- Applicable to mass based effluent guidelines, these values indicate the amount of production in 1000 lbs/day.
- (\*7) Flow to Treatment Plant Fraction- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the remaining fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation.
- (\*8) Parameter flow in MGD- This flow is associated with the parameter specified in columns (\*2) and (\*3) and is used in determining flow based loadings.
- (\*9) Parameter flow in MGD- This flow is associated with the parameter specified in columns (\*4) and (\*5) and is used in determining flow based loadings.
- (\*10) Average guideline subcategory/subpart or source quantity allowance in lbs/day for specified parameter. For concentration-based guidelines/BPJ, this is determined by multiplying the concentration specified in column (\*2) times the flow specified in column (\*8) times the conversion factor 8.34. For mass-based guidelines the guideline process factor in column (\*2) is multiplied times the daily production value specified in column (\*6) and the flow to treatment plant fraction in column (\*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means.
- (\*11) Maximum guideline subcategory/subpart or source quantity allowance in lbs/day for specified parameter. For concentration-based guidelines/BPJ, this is determined by multiplying the concentration specified in column (\*3) times the flow specified in column (\*8) times the conversion factor 8.34. For mass-based guidelines the guideline process factor in column (\*3) is multiplied times the daily production value specified in column (\*6) and the flow to treatment plant fraction in column (\*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means.
- (\*12) Similar to column (\*10). See description for (\*10).
- (\*13) Similar to column (\*11). See description for (\*11).

Table 4

Table 4 is a calculation summary table for Conventional, Non-Conventional, and Toxic limits. If there is one consolidated OCPSF metal bearing waste stream per metal and this is the only metal source, then the guideline concentrations in columns (\*2) (Daily Average) and (\*3) (Daily Maximum) are multiplied times the flow in column (\*4) times the conversion factor of 8.34 to yield daily average



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and daily maximum guideline loadings in lbs/day in columns (\*5) and (\*6), respectively.

- (\*1) Parameter- The parameters are organized into three groups, Conventional, Non-Conventional, and Metals and Cyanide.
- (\*2) Average guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSF only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.
- (\*3) Maximum guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSF only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.
- (\*4) Process flow in MGD- Similar to columns (\*2) and (\*3), this column will be left blank unless there is one consolidated metal/cyanide bearing waste stream.
- (\*5) Average Guideline/BPJ effluent limitation in lbs/day. Except for the metal/cyanide situation discussed in column (\*2), these values are calculated in other tables and summarized in this column.
- (\*6) Maximum Guideline/BPJ effluent limitation in lbs/day. Similar to column (\*5).
- (\*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.1, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits ( $\approx 10\%$  or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.
- (\*8) Maximum Tech Old in lbs/day- Similar to (\*7).
- (\*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- Anti-Backsliding screening switch. The default is set under section (\*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (\*10) and (\*11). If the screen indicates that the previously issued permit limit utilizing BPJ-Tech is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using

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guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (\*4) and (\*5) are subsequently added to the values in columns (\*7) and (\*8) yielding technology-based effluent limitations in columns (\*10) and (\*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

- (\*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (\*5). When anti-backsliding screening is used, see discussion for column (\*9).
- (\*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (\*6). When anti-backsliding screening is used, see discussion for column (\*9).
- (\*12) Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (\*1) in Table 1 and the mass limitation calculated under column (\*10). The formula is as follows:
- $$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} \times 8.34}$$
- (\*13) Maximum technology based effluent limit in mg/L- Similar to column (\*11), a concentration limit can be calculated using the specified concentration flow from section (\*1) in Table 1 and the mass limitation calculated under column (\*11). The formula is as follows:
- $$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} \times 8.34}$$

## APPENDIX B

OUTFALL 001

wqsmoan.wk4 Date: 06/05 Appendix B-1  
 Developer: Bruce Fielding Time: 09:43 AM  
 Software: Lotus 4.0 LA0108936, AI No. 40486  
 Revision date: 09/07/06

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## Water Quality Screen for AMCOL Health &amp; Beauty Solutions, Inc.

## Input variables:

Receiving Water Characteristics:		Dilution:	Toxicity Dilution Series:	
		ZID Fs =	0.1	Biomonitoring dilution: 0.189389
Receiving Water Name= Francois Coulee				Dilution Series Factor: 0.75
Critical flow (Qr) cfs=	0.1	MZ Fs =	1	
Harm. mean/avg tidal cfs=	1	Critical Qr (MGD)=	0.06463	Percent Effluent
Drinking Water=1 HHNPCR=2		Harm. Mean (MGD)=	0.6463	Dilution No. 1 25.252%
Marine, 1=y, 0=n		ZID Dilution =	0.700274	Dilution No. 2 18.9389%
Rec. Water Hardness=	84.64	MZ Dilution =	0.189389	Dilution No. 3 14.2042%
Rec. Water TSS=	19.3	HHnc Dilution=	0.189389	Dilution No. 4 10.6531%
Fisch/Specific=1,Stream=0		HHc Dilution=	0.02283	Dilution No. 5 7.9899%
Diffuser Ratio=		ZID Upstream =	0.428013	
		MZ Upstream =	4.280132	
		MZhhnc Upstream=	4.280132	
Effluent Characteristics:		Partition Coefficients; Dissolved-->Total		
Permittee=	AMCOL Health & Beauty Solutions, Inc.		METALS FW	
Permit Number=	LA0108936, AI No. 40486		Total Arsenic	2.067436
Facility flow (Qef),MGD=	0.0151	MZhhc Upstream=	42.80132	Total Cadmium 3.72231
		ZID Hardness=	---	Chromium III 5.133598
Outfall Number =	001	MZ Hardness=	---	Chromium VI 1
Eff. data, 2=lbs/day	1	ZID TSS=	---	Total Copper 3.24532
QQL, 2=lbs/day	1	MZ TSS=	---	Total Lead 6.061386
Effluent Hardness=	N/A	Multipliers:		Total Mercury 2.916108
Effluent TSS=	N/A	WLAa --> LTAA	0.32	Total Nickel 2.749789
WQBL ind. 0=y, 1=n		WLAC --> LTAC	0.53	Total Zinc 4.037926
Acute/Chr. ratio 0=n, 1=y	0	LTA a,c-->WQBL avg	1.31	
Aquatic,acute only1=y,0=n		LTA a,c-->WQBL max	3.11	Aquatic Life, Dissolved
		LTA h --> WQBL max	2.38	Metal Criteria, ug/L
		WQBL-limit/report	2.13	
Page Numbering/Labeling		WLA Fraction	1	METALS ACUTE CHRONIC
Appendix	Appendix B-1	WQBL Fraction	1	Arsenic 339.8 150
Page Numbers 1=y, 0=n	1			Cadmium 26.54546 0.911443
Input Page # 1=y, 0=n	1			Chromium III 478.6848 155.2804
		Conversions:		Chromium VI 15.712 10.582
Fischer/Site Specific inputs:		ug/L-->lbs/day Qef0.000126		Copper 15.74692 10.65252
Pipe=1,Canal=2,Specific=3		ug/L-->lbs/day Qeo 0		Lead 53.83339 2.09781
Pipe width, feet		ug/L-->lbs/day Qr 0.000834		Mercury 1.734 0.012
ZID plume dist., feet		lbs/day-->ug/L Qeo7940.667		Nickel 1229.165 136.5086
MZ plume dist., feet		lbs/day-->ug/L Qef7940.667		Zinc 99.36666 90.73683
HHnc plume dist., feet		diss-->tot 1=y0=n	1	
HHc plume dist., feet		Cu diss-->tot1=y0=n	1	Site Specific Multiplier Values:
		cfs-->MGD	0.6463	CV =
				N =
Fischer/site specific dilutions:		Receiving Stream:		WLAa --> LTAA
F/specific ZID Dilution =	---	Default Hardness=	25	WLAC --> LTAC
F/specific MZ Dilution =	---	Default TSS=	10	LTA a,c-->WQBL avg
F/specific HHnc Dilution=	---	99 Crit., 1=y, 0=n	1	LTA a,c-->WQBL max
F/specific HHc Dilution=	---			LTA h --> WQBL max

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(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic	CuEffluent Effluent			MQLEffluent	95th %		Numerical Criteria			HH
Parameters	Instream	/Tech	/Tech	1=No	95%	estimate	Acute	Chronic	HHNDW	Carcinogen
	Conc.	(Avg)	(Max)	0=95 %	Non-Tech		FW	FW		Indicator
	ug/L	ug/L	ug/L	ug/L	ug/L		ug/L	ug/L	ug/L	"C"
NONCONVENTIONAL										
Total Phenols (4AAP)				5			700	350	50	
3-Chlorophenol				10						
4-Chlorophenol				10			383	192		
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenocy-										
acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen-										
oxy) propionic acid										
(2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic				10			702.5146	310.1154		
Total Cadmium				1			98.81042	3.392674		
Chromium III				10			2457.375	797.1471		
Chromium VI				10			15.712	10.582		
Total Copper				10			51.10381	34.57085		
Total Lead				5			326.305	12.71564		
Total Mercury				0.2			5.056531	0.034993		
Total Nickel				40			3379.944	375.3699		
Total Zinc		1060		20	0	2257.8	401.2352	366.3886		
Total Cyanide				20			45.9	5.4	12844	
DIOXIN										
2,3,7,8 TCDD; dioxin				1.0E-005					7.2E-007	C
VOLATILE COMPOUNDS										
Benzene				10			2249	1125	12.5	C
Bromoform				10			2930	1465	34.7	C
Bromodichloromethane				10					3.3	C
Carbon Tetrachloride				10			2730	1365	1.2	C
Chloroform				10			2890	1445	70	C
Dibromochloromethane				10					5.08	C
1,2-Dichloroethane				10			11800	5900	6.8	C
1,1-Dichloroethylene				10			1160	580	0.58	C
1,3-Dichloropropylene				10			606	303	162.79	
Ethylbenzene				10			3200	1600	8100	
Methyl Chloride				50			55000	27500		
Methylene Chloride				20			19300	9650	87	C
1,1,2,2-Tetrachloro-										
ethane				10			932	466	1.8	C

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AMCOL Health &amp; Beauty Solutions, Inc.

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(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22)	(*23)
Toxic	WLAa	WLAc	WLAh	LTAa	LTAc	LTAh	Limiting	WQBL	WQBL	WQBL	WQBL	Need
Parameters	Acute	Chronic	HHNDW	Acute	Chronic	HHNDW	A,C,HH	Avg	Max	Avg	Max	WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	999.6093	1848.046	264.0066	319.875	979.4646	264.0066	264.0066	264.0066	628.3358	0.033247	0.079129	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	546.9291	1013.785	---	175.0173	537.3063	---	175.0173	229.2727	544.3038	0.028873	0.068546	no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenoc-												
acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-												
oxy) propionic acid												
(2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE												
Total Arsenic	1003.2	1637.45	---	321.0241	867.8486	---	321.0241	420.5415	998.3849	0.05296	0.125731	no
Total Cadmium	141.1026	17.91377	---	45.15283	9.494298	---	9.494298	12.43753	29.52727	0.001566	0.003718	no
Chromium III	3509.164	4209.043	---	1122.933	2230.793	---	1122.933	1471.042	3492.321	0.185254	0.439802	no
Chromium VI	22.43694	55.87436	---	7.179822	29.61341	---	7.179822	9.405567	22.32925	0.001184	0.002812	no
Total Copper	72.97691	182.5386	---	23.35261	96.74548	---	23.35261	30.59192	72.62662	0.003853	0.009146	no
Total Lead	465.9679	67.14025	---	149.1097	35.58433	---	35.58433	46.61548	110.6673	0.00587	0.013937	no
Total Mercury	7.220794	0.184769	---	2.310654	0.097928	---	0.097928	0.128285	0.304555	0.000016	0.000038	no
Total Nickel	4826.605	1982.003	---	1544.514	1050.462	---	1050.462	1376.105	3266.935	0.173298	0.411418	no
Total Zinc	572.9692	1934.58	---	183.3501	1025.328	---	183.3501	240.1887	570.219	0.030248	0.07181	yes
Total Cyanide	65.54581	28.51272	67818.02	20.97466	15.11174	67818.02	15.11174	19.79638	46.99751	0.002493	0.005919	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.000032	---	---	0.000032	0.000032	0.000032	0.000075	4E-009	9.5E-009	no
VOLATILE COMPOUNDS												
Benzene	3211.602	5940.149	547.5166	1027.713	3148.279	547.5166	547.5166	547.5166	1303.089	0.068951	0.164103	no
Bromoform	4184.079	7735.394	1519.906	1338.905	4099.759	1519.906	1338.905	1753.966	4163.995	0.220884	0.524389	no
Bromodichloromethane	---	---	144.5444	---	---	144.5444	144.5444	144.5444	344.0156	0.018203	0.043323	no
Carbon Tetrachloride	3898.476	7207.381	52.56159	1247.512	3819.912	52.56159	52.56159	52.56159	125.0966	0.006619	0.015754	no
Chloroform	4126.958	7629.791	3066.093	1320.627	4043.789	3066.093	1320.627	1730.021	4107.149	0.217868	0.51723	no
Dibromochloromethane	---	---	222.5107	---	---	222.5107	222.5107	222.5107	529.5755	0.028022	0.066692	no
1,2-Dichloroethane	16850.56	31152.78	297.849	5392.178	16510.97	297.849	297.849	297.849	708.8806	0.037509	0.089272	no
1,1-Dichloroethylene	1656.495	3062.477	25.40477	530.0785	1623.113	25.40477	25.40477	25.40477	60.46335	0.003199	0.007614	no
1,3-Dichloropropylene	865.376	1599.88	859.5528	276.9203	847.9365	859.5528	276.9203	362.7656	861.2222	0.045685	0.108457	no
Ethylbenzene	4569.642	8448.212	42769.07	1462.286	4477.552	42769.07	1462.286	1915.594	4547.708	0.241238	0.572711	no
Methyl Chloride	78540.73	145203.6	---	25133.03	76957.93	---	25133.03	32924.27	78163.73	4.146285	9.843472	no
Methylene Chloride	27560.66	50953.28	3810.715	8819.41	27005.24	3810.715	3810.715	3810.715	9069.502	0.479899	1.142159	no
1,1,2,2-Tetrachloro-												
ethane	1330.908	2460.542	78.84238	425.8907	1304.087	78.84238	78.84238	78.84238	187.6449	0.009929	0.023631	no

[illegible]



(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22)	(*23)
Toxic Parameters	WLAa	WLAc	WLAh	LTAa	LTAc	LTAh	Limiting	WQBL	WQBL	WQBL	WQBL	Need
	Acute	Chronic	HHNDW	Acute	Chronic	HHNDW	A,C,HH	Avg	Max	Avg	Max	WQBL?
								001	001	001	001	
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	1842.137	3405.685	109.5033	589.4839	1805.013	109.5033	109.5033	109.5033	260.6179	0.01379	0.032821	no
Toluene	1813.577	3352.884	243942.1	580.3446	1777.029	243942.1	580.3446	760.2514	1804.872	0.095742	0.227295	
1,1,1-Trichloroethane	7539.91	13939.55	---	2412.771	7387.961	---	2412.771	3160.73	7503.718	0.398043	0.944973	no
1,1,2-Trichloroethane	2570.424	4752.119	302.2291	822.5356	2518.623	302.2291	302.2291	302.2291	719.3054	0.038061	0.090585	no
Trichloroethylene	5569.252	10296.26	919.8278	1782.161	5457.017	919.8278	919.8278	919.8278	2189.19	0.115838	0.275693	no
Vinyl Chloride	---	---	1568.087	---	---	1568.087	1568.087	1568.087	3732.048	0.197476	0.469992	no
ACID COMPOUNDS												
2-Chlorophenol	368.4274	681.1371	667.4087	117.8968	361.0027	667.4087	117.8968	154.4448	366.659	0.01945	0.046175	no
2,4-Dichlorophenol	288.4587	533.2934	1228.159	92.30678	282.6455	1228.159	92.30678	120.9219	287.0741	0.015228	0.036152	no
BASE NEUTRAL COMPOUNDS												
Benzidine	357.0033	660.0166	0.007446	114.2411	349.8088	0.007446	0.007446	0.007446	0.017722	9.4E-007	0.000002	no
Hexachlorobenzene	---	---	0.01095	---	---	0.01095	0.01095	0.01095	0.026062	0.000001	0.000003	no
Hexachlorabutadiene	7.282868	5.385735	4.818146	2.330518	2.85444	4.818146	2.330518	3.052978	7.24791	0.000384	0.000913	no
PESTICIDES												
Aldrin	4.28404	---	0.017521	1.370893	---	0.017521	0.017521	0.017521	0.041699	0.000002	0.000005	no
Hexachlorocyclohexane (gamma BHC, Lindane)	7.56847	1.108828	8.760265	2.42191	0.587679	8.760265	0.587679	0.769859	1.827681	0.000097	0.00023	no
Chlordane	3.427232	0.022705	0.008322	1.096714	0.012033	0.008322	0.008322	0.008322	0.019807	0.000001	0.000002	no
4,4'-DDT	1.570815	0.00528	0.008322	0.502661	0.002798	0.008322	0.002798	0.003666	0.008703	4.6E-007	0.000001	no
4,4'-DDE	74.9707	55.44139	0.008322	23.99062	29.38394	0.008322	0.008322	0.008322	0.019807	0.000001	0.000002	no
4,4'-DDD	0.04284	0.031681	0.011826	0.013709	0.016791	0.011826	0.011826	0.011826	0.028147	0.000001	0.000004	no
Dieldrin	0.33901	0.294103	0.00219	0.108483	0.155875	0.00219	0.00219	0.00219	0.005212	2.8E-007	6.6E-007	no
Endosulfan	0.314163	0.295687	3.379285	0.100532	0.156714	3.379285	0.100532	0.131697	0.312655	0.000017	0.000039	no
Endrin	0.12338	0.198005	1.372834	0.039482	0.104943	1.372834	0.039482	0.051721	0.122788	0.000007	0.000015	no
Heptachlor	0.742567	0.020065	0.003066	0.237621	0.010634	0.003066	0.003066	0.003066	0.007297	3.9E-007	9.2E-007	no
Toxaphene	1.04245	0.001056	0.010512	0.333584	0.00056	0.010512	0.00056	0.000733	0.001741	9.2E-008	2.2E-007	no
Other Parameters:												
Fecal Col. (col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	27.13225	58.08146	---	8.682321	30.78317	---	8.682321	11.37384	27.00202	0.001432	0.0034	no
Ammonia	---	21120.53	---	---	11193.88	---	11193.88	14663.98	34812.97	1.846694	4.384136	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

## OUTFALL 002

wqsmoan.wk4 Date: 06/08 Appendix B-2  
 Developer: Bruce Fielding Time: 01:40 PM  
 Software: Lotus 4.0 LA0108936, AI No. 40486  
 Revision date: 09/07/06

Page 1

## Water Quality Screen for AMCOL Health &amp; Beauty Solutions, Inc.

## Input variables:

## Receiving Water Characteristics:

## Dilution:

## Toxicity Dilution Series:

Receiving Water Name=	Francois Coulee	ZID Fs =	0.1	Biomonitoring dilution:	0.202394
Critical flow (Qr) cfs=	0.1	MZ Fs =	1	Dilution Series Factor:	0.75
Harm. mean/avg tidal cfs=	1	Critical Qr (MGD)=	0.06463		Percent Effluent
Drinking Water=1 HHNPCR=2		Harm. Mean (MGD)=	0.6463	Dilution No. 1	26.986%
Marine, 1=y, 0=n		ZID Dilution =	0.717316	Dilution No. 2	20.2394%
Rec. Water Hardness=	84.64	MZ Dilution =	0.202394	Dilution No. 3	15.1796%
Rec. Water TSS=	19.3	HHnc Dilution=	0.202394	Dilution No. 4	11.3847%
Fisch/Specific=1,Stream=0		HHc Dilution=	0.024747	Dilution No. 5	8.5385%
Diffuser Ratio=		ZID Upstream =	0.394085		
		MZ Upstream =	3.940854		
		MZhhnc Upstream=	3.940854		

## Effluent Characteristics:

## MZhnc Upstream= 3.940854

## Partition Coefficients; Dissolved--&gt;Total

Permittee= AMCOL Health &amp; Beauty Solutions, Inc.

## METALS

## FW

Permit Number= LA0108936, AI No. 40486

Total Arsenic 2.067436

Facility flow (Qef),MGD= 0.0164

MZhnc Upstream= 39.40854

Total Cadmium 3.72231

ZID Hardness= ---

Chromium III 5.133598

Outfall Number = 2

MZ Hardness= ---

Chromium VI 1

Eff. data, 2=lbs/day 1

ZID TSS= ---

Total Copper 3.24532

MQL, 2=lbs/day 1

MZ TSS= ---

Total Lead 6.061386

Effluent Hardness= N/A

## Multipliers:

Total Mercury 2.916108

Effluent TSS= N/A

WLAA --&gt; LTAA 0.32

Total Nickel 2.749789

WQBL ind. 0=y, 1=n

WLAC --&gt; LTAC 0.53

Total Zinc 4.037926

Acute/Chr. ratio 0=n, 1=y 0

LTA a,c--&gt;WQBL avg 1.31

## Aquatic Life, Dissolved

Aquatic,acute only1=y,0=n

LTA a,c--&gt;WQBL max 3.11

## Metal Criteria, ug/L

LTA h --&gt; WQBL max 2.38

WQBL-limit/report 2.13

METALS ACUTE CHRONIC

## Page Numbering/Labeling

WLA Fraction 1

Arsenic 339.8 150

Appendix Appendix B-2

WQBL Fraction 1

Cadmium 26.54546 0.911443

Page Numbers 1=y, 0=n 1

Chromium III 478.6848 155.2804

Input Page # 1=y, 0=n 1

Chromium VI 15.712 10.582

## Fischer/Site Specific inputs:

ug/L--&gt;lbs/day Qef0.000137

Copper 15.74692 10.65252

Pipe=1,Canal=2,Specific=3

ug/L--&gt;lbs/day Qeo 0

Lead 53.83339 2.09781

Pipe width, feet

ug/L--&gt;lbs/day Qr 0.000834

Mercury 1.734 0.012

ZID plume dist., feet

lbs/day--&gt;ug/L Qeo7311.224

Nickel 1229.165 136.5086

MZ plume dist., feet

lbs/day--&gt;ug/L Qef7311.224

Zinc 99.36666 90.73683

HHnc plume dist., feet

diss--&gt;tot 1=y0=n 1

## Site Specific Multiplier Values:

HHc plume dist., feet

Cu diss--&gt;tot1=y0=n 1

CV = ---

cfs--&gt;MGD 0.6463

N = ---

## Fischer/site specific dilutions:

## Receiving Stream:

WLAA --&gt; LTAA ---

F/specific ZID Dilution = ---

Default Hardness= 25

WLAC --&gt; LTAC ---

F/specific MZ Dilution = ---

Default TSS= 10

LTA a,c--&gt;WQBL avg ---

F/specific HHnc Dilution= ---

99 Crit., 1=y, 0=n 1

LTA a,c--&gt;WQBL max ---

F/specific HHc Dilution= ---

LTA h --&gt; WQBL max ---

## Appendix B-2

Page 2

AMCOL Health &amp; Beauty Solutions, Inc.

LA0108936, AI No. 40486

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic	CuEffluent		Effluent	MQLEffluent		95th %	Numerical Criteria		HH	
Parameters	Instream	/Tech	/Tech	1=No	95%	estimate	Acute	Chronic	HHNDW	Carcinogen
	Conc.	(Avg)	(Max)	0=95 %	Non-Tech		FW	FW	Indicator	
	ug/L	ug/L	ug/L	ug/L	ug/L		ug/L	ug/L	ug/L	"C"
NONCONVENTIONAL										
Total Phenols (4AAP)		25		5	0	53.25	700	350	50	
3-Chlorophenol				10						
4-Chlorophenol				10			383	192		
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenocy-										
acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen-										
oxy) propionic acid										
(2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic				10			702.5146	310.1154		
Total Cadmium				1			98.81042	3.392674		
Chromium III				10			2457.375	797.1471		
Chromium VI				10			15.712	10.582		
Total Copper				10			51.10381	34.57085		
Total Lead				5			326.305	12.71564		
Total Mercury				0.2			5.056531	0.034993		
Total Nickel				40			3379.944	375.3699		
Total Zinc				20			401.2352	366.3886		
Total Cyanide				20			45.9	5.4	12844	
DIOXIN										
2,3,7,8 TCDD; dioxin				1.0E-005					7.2E-007	C
VOLATILE COMPOUNDS										
Benzene				10			2249	1125	12.5	C
Bromoform				10			2930	1465	34.7	C
Bromodichloromethane				10					3.3	C
Carbon Tetrachloride				10			2730	1365	1.2	C
Chloroform				10			2890	1445	70	C
Dibromochloromethane				10					5.08	C
1,2-Dichloroethane				10			11800	5900	6.8	C
1,1-Dichloroethylene				10			1160	580	0.58	C
1,3-Dichloropropylene				10			606	303	162.79	
Ethylbenzene				10			3200	1600	8100	
Methyl Chloride				50			55000	27500		
Methylene Chloride				20			19300	9650	87	C
1,1,2,2-Tetrachloro-										
ethane				10			932	466	1.8	C

## Appendix B-2

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AMCOL Health &amp; Beauty Solutions, Inc.

LA0108936, AI No. 40486

(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22) (*23)
Toxic	WLAa	WLAc	WLAh	LTAa	LTAc	LTAh	Limiting	WQBL	WQBL	WQBL	WQBL Need
Parameters	Acute	Chronic	HHNDW	Acute	Chronic	HHNDW	A,C,HH	Avg	Max	Avg	MaxWQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day
NONCONVENTIONAL											
Total Phenols (4AAP)	975.8598	1729.299	247.0427	312.2751	916.5284	247.0427	247.0427	247.0427	587.9616	0.03379	0.080419 no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---
4-Chlorophenol	533.9347	948.6439	---	170.8591	502.7813	---	170.8591	223.8254	531.3718	0.030614	0.072679 no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenoxy-acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---
2-(2,4,5-Trichlorophenoxy) propionic acid (2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---
METALS AND CYANIDE											
Total Arsenic	979.3654	1532.235	---	313.3969	812.0843	---	313.3969	410.55	974.6644	0.056153	0.133311 no
Total Cadmium	137.7502	16.76271	---	44.08005	8.884235	---	8.884235	11.63835	27.62997	0.001592	0.003779 no
Chromium III	3425.791	3938.587	---	1096.253	2087.451	---	1096.253	1436.092	3409.347	0.196423	0.466317 no
Chromium VI	21.90387	52.28411	---	7.009238	27.71058	---	7.009238	9.182102	21.79873	0.001256	0.002982 no
Total Copper	71.24307	170.8095	---	22.79778	90.52903	---	22.79778	29.86509	70.9011	0.004085	0.009698 no
Total Lead	454.897	62.8261	---	145.567	33.29783	---	33.29783	43.62016	103.5563	0.005966	0.014164 no
Total Mercury	7.049236	0.172897	---	2.255756	0.091635	---	0.091635	0.120042	0.284986	0.000016	0.000039 no
Total Nickel	4711.931	1854.648	---	1507.818	982.9634	---	982.9634	1287.682	3057.016	0.176124	0.418126 no
Total Zinc	559.3561	1810.272	---	178.994	959.4444	---	178.994	234.4821	556.6712	0.032072	0.076139 no
Total Cyanide	63.98852	26.68061	63460.32	20.47633	14.14072	63460.32	14.14072	18.52435	43.97765	0.002534	0.006015 no
DIOXIN											
2,3,7,8 TCDD; dioxin	---	---	0.000029	---	---	0.000029	0.000029	0.000029	0.000069	4E-009	9.5E-009 no
VOLATILE COMPOUNDS											
Benzene	3135.298	5558.46	505.1067	1003.295	2945.984	505.1067	505.1067	505.1067	1202.154	0.069086	0.164426 no
Bromoform	4084.67	7238.351	1402.176	1307.094	3836.326	1402.176	1307.094	1712.294	4065.064	0.234201	0.556003 no
Bromodichloromethane	---	---	133.3482	---	---	133.3482	133.3482	133.3482	317.3686	0.018239	0.043408 no
Carbon Tetrachloride	3805.853	6744.265	48.49024	1217.873	3574.461	48.49024	48.49024	48.49024	115.4068	0.006632	0.015785 no
Chloroform	4028.907	7139.534	2828.598	1289.25	3783.953	2828.598	1289.25	1688.918	4009.568	0.231003	0.548413 no
Dibromochloromethane	---	---	205.2754	---	---	205.2754	205.2754	205.2754	488.5554	0.028077	0.066823 no
1,2-Dichloroethane	16450.21	29151.04	274.778	5264.066	15450.05	274.778	274.778	274.778	653.9718	0.037583	0.089448 no
1,1-Dichloroethylene	1617.139	2865.695	23.43695	517.4845	1518.818	23.43695	23.43695	23.43695	55.77994	0.003206	0.007629 no
1,3-Dichloropropylene	844.8157	1497.079	804.3216	270.341	793.4517	804.3216	270.341	354.1468	840.7606	0.048439	0.114996 no
Ethylbenzene	4461.073	7905.366	40020.91	1427.543	4189.844	40020.91	1427.543	1870.082	4439.66	0.255782	0.607239 no
Methyl Chloride	76674.7	135873.5	---	24535.9	72012.94	---	24535.9	32142.03	76306.66	4.396259	10.43692 no
Methylene Chloride	26905.85	47679.24	3515.543	8609.871	25270	3515.543	3515.543	3515.543	8366.992	0.480842	1.144404 no
1,1,2,2-Tetrachloroethane	1299.288	2302.438	72.73537	415.772	1220.292	72.73537	72.73537	72.73537	173.1102	0.009948	0.023677 no

## Appendix B-2

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AMCOL Health &amp; Beauty Solutions, Inc.

LA0108936, AI No. 40486

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic	CuEffluent Effluent		MQLEffluent 95th %		Numerical Criteria		HH			
Parameters	Instream	/Tech	/Tech	1=No 95%	estimate	Acute	Chronic	HHNDW	Carcinogen	
	Conc.	(Avg)	(Max)	0=95 %	Non-Tech	FW	FW		Indicator	
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	"C"	
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene				10		1290	645	2.5		C
Toluene				10		1270	635	46200		
1,1,1-Trichloroethane				10		5280	2640			
1,1,2-Trichloroethane				10		1800	900	6.9		C
Trichloroethylene				10		3900	1950	21		C
Vinyl Chloride				10				35.8		C
ACID COMPOUNDS										
2-Chlorophenol				10		258	129	126.4		
2,4-Dichlorophenol				10		202	101	232.6		
BASE NEUTRAL COMPOUNDS										
Benzidine				50		250	125	0.00017		C
Hexachlorobenzene				10				0.00025		C
Hexachlorabutadiene				10		5.1	1.02	0.11		C
PESTICIDES										
Aldrin				0.05		3		0.0004		C
Hexachlorocyclohexane										
(gamma BHC, Lindane)				0.05		5.3	0.21	0.2		C
Chlordane				0.2		2.4	0.0043	0.00019		C
4,4'-DDT				0.1		1.1	0.001	0.00019		C
4,4'-DDE				0.1		52.5	10.5	0.00019		C
4,4'-DDD				0.1		0.03	0.006	0.00027		C
Dieldrin				0.1		0.2374	0.0557	0.00005		C
Endosulfan				0.1		0.22	0.056	0.64		
Endrin				0.1		0.0864	0.0375	0.26		
Heptachlor				0.05		0.52	0.0038	0.00007		C
Toxaphene				5		0.73	0.0002	0.00024		C
Other Parameters:										
Fecal Col. (col/100ml)										
Chlorine						19	11			
Ammonia							4000			
Chlorides										
Sulfates										
TDS		1.15			1			440000		

AMCOL Health & Beauty Solutions, Inc.

LA0108936, AI No. 40486

(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22)	(*23)
Toxic Parameters	WLAa	WLAc	WLAh	LTAa	LTAc	LTAh	Limiting	WQBL	WQBL	WQBL	WQBL	Need
	Acute	Chronic	HHNDW	Acute	Chronic	HHNDW	A,C,HH	Avg	Max	Avg	Max	WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	1798.37	3186.851	101.0213	575.4784	1689.031	101.0213	101.0213	101.0213	240.4308	0.013817	0.032885	no
Toluene	1770.488	3137.442	228267.4	566.5563	1662.844	228267.4	566.5563	742.1887	1761.99	0.101514	0.240998	no
1,1,1-Trichloroethane	7360.771	13043.85	---	2355.447	6913.242	---	2355.447	3085.635	7325.439	0.422041	1.001944	no
1,1,2-Trichloroethane	2509.354	4446.768	278.8189	802.9932	2356.787	278.8189	278.8189	278.8189	663.589	0.038136	0.090763	no
Trichloroethylene	5436.933	9634.665	848.5793	1739.819	5106.372	848.5793	848.5793	848.5793	2019.619	0.116065	0.276235	no
Vinyl Chloride	---	---	1446.626	---	---	1446.626	1446.626	1446.626	3442.969	0.197864	0.470916	no
ACID COMPOUNDS												
2-Chlorophenol	359.674	637.3701	624.5239	115.0957	337.8062	624.5239	115.0957	150.7754	357.9476	0.020622	0.048959	no
2,4-Dichlorophenol	281.6052	499.0262	1149.243	90.11368	264.4839	1149.243	90.11368	118.0489	280.2535	0.016146	0.038332	no
BASE NEUTRAL COMPOUNDS												
Benzidine	348.5213	617.6067	0.006869	111.5268	327.3316	0.006869	0.006869	0.006869	0.016349	9.4E-007	0.000002	no
Hexachlorobenzene	---	---	0.010102	---	---	0.010102	0.010102	0.010102	0.024043	0.000001	0.000003	no
Hexachlorabutadiene	7.109835	5.039671	4.444939	2.275147	2.671025	4.444939	2.275147	2.980443	7.075708	0.000408	0.000968	no
PESTICIDES												
Aldrin	4.182256	---	0.016163	1.338322	---	0.016163	0.016163	0.016163	0.038469	0.000002	0.000005	no
Hexachlorocyclohexane (gamma BHC, Lindane)	7.388652	1.037579	8.081707	2.364369	0.549917	8.081707	0.549917	0.720391	1.710242	0.000099	0.000234	no
Chlordane	3.345805	0.021246	0.007678	1.070658	0.01126	0.007678	0.007678	0.007678	0.018273	0.000001	0.000002	no
4,4'-DDT	1.533494	0.004941	0.007678	0.490718	0.002619	0.007678	0.002619	0.00343	0.008144	4.7E-007	0.000001	no
4,4'-DDE	73.18948	51.87896	0.007678	23.42063	27.49585	0.007678	0.007678	0.007678	0.018273	0.000001	0.000002	no
4,4'-DDD	0.041823	0.029645	0.01091	0.013383	0.015712	0.01091	0.01091	0.01091	0.025967	0.000001	0.000004	no
Dieldrin	0.330956	0.275206	0.00202	0.105906	0.145859	0.00202	0.00202	0.00202	0.004809	2.8E-007	6.6E-007	no
Endosulfan	0.306699	0.276688	3.162146	0.098144	0.146645	3.162146	0.098144	0.128568	0.305227	0.000018	0.000042	no
Endrin	0.120449	0.185282	1.284622	0.038544	0.098199	1.284622	0.038544	0.050492	0.119871	0.000007	0.000016	no
Heptachlor	0.724924	0.018775	0.002829	0.231976	0.009951	0.002829	0.002829	0.002829	0.006732	3.9E-007	9.2E-007	no
Toxaphene	1.017682	0.000988	0.009698	0.325658	0.000524	0.009698	0.000524	0.000686	0.001629	9.4E-008	2.2E-007	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	26.48762	54.34939	---	8.476039	28.80518	---	8.476039	11.10361	26.36048	0.001519	0.003605	no
Ammonia	---	19763.41	---	---	10474.61	---	10474.61	13721.74	32576.04	1.876805	4.45562	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	1.8E+007	---	---	1.8E+007	1.8E+007	1.8E+007	4.2E+007	2431.844	5787.789	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

OUTFALL 003



wqsmoan.wk4 Date: 06/08 Appendix B-3  
 Developer: Bruce Fielding Time: 08:47 AM  
 Software: Lotus 4.0 LA0108936, AI No. 40486  
 Revision date: 09/07/06

Page 1

## Water Quality Screen for AMCOL Health &amp; Beauty Solutions, Inc.

## Input variables:

## Receiving Water Characteristics:

## Dilution:

## Toxicity Dilution Series:

ZID Fs = 0.1

Biomonitoring dilution: 0.142042

Receiving Water Name= Francois Coulee

Dilution Series Factor: 0.75

Critical flow (Qr) cfs= 0.1

MZ Fs = 1

Harm. mean/avg tidal cfs= 1

Critical Qr (MGD)= 0.06463

Percent Effluent

Drinking Water=1 HHNPCR=2

Harm. Mean (MGD)= 0.6463

Dilution No. 1 18.939%

Marine, 1=y, 0=n

ZID Dilution = 0.623434

Dilution No. 2 14.2042%

Rec. Water Hardness= 84.64

MZ Dilution = 0.142042

Dilution No. 3 10.6531%

Rec. Water TSS= 19.3

HHnc Dilution= 0.142042

Dilution No. 4 7.9898%

Fisch/Specific=1,Stream=0

HHc Dilution= 0.016286

Dilution No. 5 5.9924%

Diffuser Ratio=

ZID Upstream = 0.604019

MZ Upstream = 6.040187

Partition Coefficients; Dissolved--&gt;Total

## Effluent Characteristics:

MZhhnc Upstream= 6.040187

Permittee= AMCOL Health &amp; Beauty Solutions, Inc.

METALS FW

Permit Number= LA0108936, AI No. 40486

Total Arsenic 2.067436

Facility flow (Qef),MGD= 0.0107

MZhhc Upstream= 60.40187

Total Cadmium 3.72231

ZID Hardness= ---

Chromium III 5.133598

Outfall Number = 3

MZ Hardness= ---

Chromium VI 1

Eff. data, 2=lbs/day 1

ZID TSS= ---

Total Copper 3.24532

MQL, 2=lbs/day 1

MZ TSS= ---

Total Lead 6.061386

Effluent Hardness= N/A

Multipliers:

Total Mercury 2.916108

Effluent TSS= N/A

WLAa --&gt; LTAA 0.32

Total Nickel 2.749789

WQBL ind. 0=y, 1=n

WLAc --&gt; LTAc 0.53

Total Zinc 4.037926

Acute/Chr. ratio 0=n, 1=y 0

LTA a,c--&gt;WQBL avg 1.31

Aquatic Life, Dissolved

Aquatic,acute only1=y,0=n

LTA a,c--&gt;WQBL max 3.11

Metal Criteria, ug/L

LTA h --&gt; WQBL max 2.38

WQBL-limit/report 2.13

METALS ACUTE CHRONIC

Page Numbering/Labeling

WLA Fraction 1

Arsenic 339.8 150

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WQBL Fraction 1

Cadmium 26.54546 0.911443

Page Numbers 1=y, 0=n 1

Chromium III 478.6848 155.2804

Input Page # 1=y, 0=n 1

Chromium VI 15.712 10.582

Conversions:

Copper 15.74692 10.65252

Fischer/Site Specific inputs:

ug/L--&gt;lbs/day Qef0.000089

Lead 53.83339 2.09781

Pipe=1,Canal=2,Specific=3

ug/L--&gt;lbs/day Qeo 0

Mercury 1.734 0.012

Pipe width, feet

ug/L--&gt;lbs/day Qr 0.000834

Nickel 1229.165 136.5086

ZID plume dist., feet

lbs/day--&gt;ug/L Qeo11205.99

Zinc 99.36666 90.73683

MZ plume dist., feet

lbs/day--&gt;ug/L Qef11205.99

HHnc plume dist., feet

diss--&gt;tot 1=y0=n 1

HHc plume dist., feet

Cu diss--&gt;tot1-y0=n 1

cfs--&gt;MGD 0.6463

Site Specific Multiplier Values:

Fischer/site specific dilutions:

CV = ---

F/specific ZID Dilution = ---

Receiving Stream:

N = ---

F/specific MZ Dilution = ---

Default Hardness= 25

WLAa --&gt; LTAA ---

F/specific HHnc Dilution= ---

Default TSS= 10

WLAc --&gt; LTAc ---

F/specific HHc Dilution= ---

99 Crit., 1=y, 0=n 1

LTA a,c--&gt;WQBL avg ---

LTA a,c--&gt;WQBL max ---

LTA h --&gt; WQBL max ---

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AMCOL Health &amp; Beauty Solutions, Inc.

LA0108936, AI No. 40486

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic	CuEffluent Effluent			MQLEffluent 95th %		Numerical Criteria		HH		
Parameters	Instream	/Tech	/Tech	1=No 95%	estimate	Acute	Chronic	HHNDW	Carcinogen	
	Conc.	(Avg)	(Max)	0=95 %	Non-Tech	FW	FW	Indicator		
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	"C"	
NONCONVENTIONAL										
Total Phenols (4AAP)				5		700	350	50		
3-Chlorophenol				10						
4-Chlorophenol				10		383	192			
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenocy-										
acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen-										
oxy) propionic acid										
(2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic				10		702.5146	310.1154			
Total Cadmium				1		98.81042	3.392674			
Chromium III				10		2457.375	797.1471			
Chromium VI				10		15.712	10.582			
Total Copper				10		51.10381	34.57085			
Total Lead				5		326.305	12.71564			
Total Mercury				0.2		5.056531	0.034993			
Total Nickel				40		3379.944	375.3699			
Total Zinc				20		401.2352	366.3886			
Total Cyanide				20		45.9	5.4	12844		
DIOXIN										
2,3,7,8 TCDD; dioxin				1.0E-005				7.2E-007		C
VOLATILE COMPOUNDS										
Benzene				10		2249	1125	12.5		C
Bromoform				10		2930	1465	34.7		C
Bromodichloromethane				10				3.3		C
Carbon Tetrachloride				10		2730	1365	1.2		C
Chloroform				10		2890	1445	70		C
Dibromochloromethane				10				5.08		C
1,2-Dichloroethane				10		11800	5900	6.8		C
1,1-Dichloroethylene				10		1160	580	0.58		C
1,3-Dichloropropylene				10		606	303	162.79		
Ethylbenzene				10		3200	1600	8100		
Methyl Chloride				50		55000	27500			
Methylene Chloride				20		19300	9650	87		C
1,1,2,2-Tetrachloro-										
ethane				10		932	466	1.8		C

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AMCOL Health &amp; Beauty Solutions, Inc.

LA0108936, AI NO. 40486

(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22) (*23)
Toxic	WLAa	WLAc	WLAh	LTAa	LTAc	LTAh	Limiting	WQBL	WQBL	WQBL	WQBL Need
Parameters	Acute	Chronic	HHNDW	Acute	Chronic	HHNDW	A, C, HH	Avg	Max	Avg	MaxWQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day
NONCONVENTIONAL											
Total Phenols (4AAP)	1122.813	2464.065	352.0093	359.3002	1305.955	352.0093	352.0093	352.0093	837.7822	0.031413	0.074762 no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	614.3392	1351.716	---	196.5885	716.4094	---	196.5885	257.531	611.3903	0.022982	0.054559 no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenocy-											
acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-											
oxy) propionic acid											
(2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE											
Total Arsenic	1126.847	2183.27	---	360.5909	1157.133	---	360.5909	472.3741	1121.438	0.042154	0.100075 no
Total Cadmium	158.4938	23.88506	---	50.718	12.65908	---	12.65908	16.5834	39.36975	0.00148	0.003513 no
Chromium III	3941.676	5612.065	---	1261.336	2974.394	---	1261.336	1652.351	3922.756	0.147452	0.350059 no
Chromium VI	25.20234	74.49926	---	8.064749	39.48461	---	8.064749	10.56482	25.08137	0.000943	0.002238 no
Total Copper	81.97146	243.3852	---	26.23087	128.9942	---	26.23087	34.36244	81.578	0.003066	0.00728 no
Total Lead	523.3993	89.52046	---	167.4878	47.44585	---	47.44585	62.15406	147.5566	0.005547	0.013168 no
Total Mercury	8.110771	0.246359	---	2.595447	0.13057	---	0.13057	0.171047	0.406074	0.000015	0.000036 no
Total Nickel	5421.494	2642.674	---	1734.878	1400.617	---	1400.617	1834.809	4355.92	0.163735	0.388714 no
Total Zinc	643.5888	2579.444	---	205.9484	1367.105	---	205.9484	269.7924	640.4996	0.024076	0.057157 no
Total Cyanide	73.62446	38.01701	90424.16	23.55983	20.14901	90424.16	20.14901	26.39521	62.66344	0.002355	0.005592 no
DIOXIN											
2,3,7,8 TCDD; dioxin	---	---	0.000044	---	---	0.000044	0.000044	0.000044	0.000105	3.9E-009	9.4E-009 no
VOLATILE COMPOUNDS											
Benzene	3607.438	7920.21	767.5234	1154.38	4197.711	767.5234	767.5234	767.5234	1826.706	0.068492	0.163012 no
Bromoform	4699.775	10313.87	2130.645	1503.928	5466.353	2130.645	1503.928	1970.146	4677.216	0.175812	0.417385 no
Bromodichloromethane	---	---	202.6262	---	---	202.6262	202.6262	202.6262	482.2503	0.018082	0.043035 no
Carbon Tetrachloride	4378.971	9609.855	73.68224	1401.271	5093.223	73.68224	73.68224	73.68224	175.3637	0.006575	0.015649 no
Chloroform	4635.614	10173.07	4298.131	1483.396	5391.727	4298.131	1483.396	1943.249	4613.363	0.173412	0.411687 no
Dibromochloromethane	---	---	311.9215	---	---	311.9215	311.9215	311.9215	742.3732	0.027835	0.066248 no
1,2-Dichloroethane	18927.42	41537.1	417.5327	6056.775	22014.66	417.5327	417.5327	417.5327	993.7279	0.03726	0.088678 no
1,1-Dichloroethylene	1860.662	4083.308	35.61308	595.4117	2164.153	35.61308	35.61308	35.61308	84.75914	0.003178	0.007564 no
1,3-Dichloropropylene	972.0353	2133.177	1146.072	311.0513	1130.584	1146.072	311.0513	407.4772	967.3696	0.036362	0.086326 no
Ethylbenzene	5132.86	11264.3	57025.51	1642.515	5970.079	57025.51	1642.515	2151.695	5108.222	0.192013	0.455848 no
Methyl Chloride	88221.03	193605.1	---	28230.73	102610.7	---	28230.73	36982.25	87797.57	3.300222	7.834879 no
Methylene Chloride	30957.56	67937.8	5341.963	9906.419	36007.04	5341.963	5341.963	5341.963	12713.87	0.476706	1.13456 no
1,1,2,2-Tetrachloro-											
ethane	1494.945	3280.727	110.5234	478.3825	1738.785	110.5234	110.5234	110.5234	263.0456	0.009863	0.023474 no

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AMCOL Health &amp; Beauty Solutions, Inc.

LA0108936, AI No. 40486

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic	CuEffluent Effluent		MQLEffluent 95th %		Numerical Criteria		HH			
Parameters	Instream	/Tech	/Tech	1-No 95%	estimate	Acute	Chronic	HHNDW	Carcinogen	
	Conc.	(Avg)	(Max)	0-95 %	Non-Tech	FW	FW		Indicator	
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	"C"	
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene				10		1290	645	2.5		C
Toluene				10		1270	635	46200		
1,1,1-Trichloroethane				10		5280	2640			
1,1,2-Trichloroethane				10		1800	900	6.9		C
Trichloroethylene				10		3900	1950	21		C
Vinyl Chloride				10				35.8		C
ACID COMPOUNDS										
2-Chlorophenol				10		258	129	126.4		
2,4-Dichlorophenol				10		202	101	232.6		
BASE NEUTRAL COMPOUNDS										
Benzidine				50		250	125	0.00017		C
Hexachlorobenzene				10				0.00025		C
Hexachlorabutadiene				10		5.1	1.02	0.11		C
PESTICIDES										
Aldrin				0.05		3		0.0004		C
Hexachlorocyclohexane										
(gamma BHC, Lindane)				0.05		5.3	0.21	0.2		C
Chlordane				0.2		2.4	0.0043	0.00019		C
4,4'-DDT				0.1		1.1	0.001	0.00019		C
4,4'-DDE				0.1		52.5	10.5	0.00019		C
4,4'-DDD				0.1		0.03	0.006	0.00027		C
Dieldrin				0.1		0.2374	0.0557	0.00005		C
Endosulfan				0.1		0.22	0.056	0.64		
Endrin				0.1		0.0864	0.0375	0.26		
Heptachlor				0.05		0.52	0.0038	0.00007		C
Toxaphene				5		0.73	0.0002	0.00024		C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine						19	11			
Ammonia							4000			
Chlorides										
Sulfates										
TDS		0.22			1			440000		

(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22)	(*23)
Toxic Parameters	WLAA	WLAC	WLAH	LTAa	LTAC	LTAH	Limiting	WQBL	WQBL	WQBL	WQBL Need	
	Acute	Chronic	HHNDW	Acute	Chronic	HHNDW	A,C,HH	Avg	Max	Avg	MaxWQBL?	
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	2069.184	4540.921	153.5047	662.1389	2406.688	153.5047	153.5047	153.5047	365.3411	0.013698	0.032602	no
Toluene	2037.104	4470.519	325256.6	651.8732	2369.375	325256.6	651.8732	853.9539	2027.326	0.076205	0.180914	no
1,1,1-Trichloroethane	8469.219	18586.09	---	2710.15	9850.63	---	2710.15	3550.296	8428.566	0.316821	0.752148	no
1,1,2-Trichloroethane	2887.234	6336.168	423.6729	923.9148	3358.169	423.6729	423.6729	423.6729	1008.341	0.037808	0.089982	no
Trichloroethylene	6255.673	13728.36	1289.439	2001.815	7276.033	1289.439	1289.439	1289.439	3068.865	0.115067	0.273859	no
Vinyl Chloride	---	---	2198.187	---	---	2198.187	2198.187	2198.187	5231.685	0.196162	0.466865	no
ACID COMPOUNDS												
2-Chlorophenol	413.8368	908.1841	889.8796	132.4278	481.3376	889.8796	132.4278	173.4804	411.8504	0.015481	0.036753	no
2,4-Dichlorophenol	324.0118	711.0589	1637.547	103.6838	376.8612	1637.547	103.6838	135.8257	322.4565	0.012121	0.028775	no
BASE NEUTRAL COMPOUNDS												
Benzidine	401.0047	880.0234	0.010438	128.3215	466.4124	0.010438	0.010438	0.010438	0.024843	9.3E-007	0.000002	no
Hexachlorobenzene	---	---	0.01535	---	---	0.01535	0.01535	0.01535	0.036534	0.000001	0.000003	no
Hexachlorabutadiene	8.180495	7.180991	6.754206	2.617759	3.805925	6.754206	2.617759	3.429264	8.141229	0.000306	0.000727	no
PESTICIDES												
Aldrin	4.812056	---	0.024561	1.539858	---	0.024561	0.024561	0.024561	0.058455	0.000002	0.000005	no
Hexachlorocyclohexane (gamma BHC, Lindane)	8.501299	1.478439	12.28037	2.720416	0.783573	12.28037	0.783573	1.02648	2.436911	0.000092	0.000217	no
Chlordane	3.849645	0.030273	0.011666	1.231886	0.016045	0.011666	0.011666	0.011666	0.027766	0.000001	0.000002	no
4,4'-DDT	1.764421	0.00704	0.011666	0.564615	0.003731	0.011666	0.003731	0.004888	0.011604	4.4E-007	0.000001	no
4,4'-DDE	84.21098	73.92196	0.011666	26.94751	39.17864	0.011666	0.011666	0.011666	0.027766	0.000001	0.000002	no
4,4'-DDD	0.048121	0.042241	0.016579	0.015399	0.022388	0.016579	0.015399	0.020172	0.04789	0.000002	0.000004	no
Dieldrin	0.380794	0.392138	0.00307	0.121854	0.207833	0.00307	0.00307	0.00307	0.007307	2.7E-007	6.5E-007	no
Endosulfan	0.352884	0.39425	4.50572	0.112923	0.208953	4.50572	0.112923	0.147929	0.35119	0.000013	0.000031	no
Endrin	0.138587	0.264007	1.830449	0.044348	0.139924	1.830449	0.044348	0.058096	0.137922	0.000005	0.000012	no
Heptachlor	0.83409	0.026753	0.004298	0.266909	0.014179	0.004298	0.004298	0.004298	0.01023	3.8E-007	9.1E-007	no
Toxaphene	1.170934	0.001408	0.014736	0.374699	0.000746	0.014736	0.000746	0.000978	0.002321	8.7E-008	2.1E-007	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	30.47636	77.44206	---	9.752434	41.04429	---	9.752434	12.77569	30.33007	0.00114	0.002707	no
Ammonia	---	28160.75	---	---	14925.2	---	14925.2	19552.01	46417.36	1.744782	4.142192	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	2.7E+007	---	---	2.7E+007	2.7E+007	2.7E+007	6.4E+007	2410.927	5738.007	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

## APPENDIX B-4 LA0108936, AI No. 40486

Documentation and Explanation of Water Quality Screen  
and Associated Lotus Spreadsheet

Each reference column is marked by a set of parentheses enclosing a number and asterisk, for example (\*1) or (\*19). These columns represent inputs, existing data sets, calculation points, and results for determining Water Quality Based Limits for an effluent of concern. The following represents a summary of information used in calculating the water quality screen:

## Receiving Water Characteristics:

Receiving Water: Bayou Baton Rouge

Critical Flow, Qrc (cfs): 0.0 (NOTE: A default value of 0.1 cfs was used for the water quality screening)

Harmonic Mean Flow, Qrh (cfs): 1

Subsegment No.: 060801

Receiving Stream Hardness (mg/L): 84.64

Receiving Stream TSS (mg/L): 19.30

MZ Stream Factor, Fs: 1

Plume distance, Pf: N/A

## Effluent Characteristics:

Company: AMCOL Health & Beauty Solutions, Inc.

Facility flow, Qe (MGD): 0.0151, 30-Day Maximum (Outfall 001); 0.164, 30-Day Maximum (Outfall 002); and 0.0107, 30-Day maximum (Outfall 003)

Effluent Hardness: N/A

Effluent TSS: N/A

Pipe/canal width, Pw: N/A

Permit Number: LA0108936

## Variable Definition:

Qrc, critical flow of receiving stream, cfs

Qrh, harmonic mean flow of the receiving stream, cfs

Pf = Allowable plume distance in feet, specified in LAC 33.IX.1115.D

Pw = Pipe width or canal width in feet

Qe, total facility flow, MGD

Fs, stream factor from LAC.IX.33.11 (1 for harmonic mean flow)

Cu, ambient concentration, ug/L

Cr, numerical criteria from LAC.IX.1113, Table 1

WLA, wasteload allocation

LTA, long term average calculations

WQBL, effluent water quality based limit

ZID, Zone of Initial Dilution in % effluent

MZ, Mixing Zone in % effluent

Formulas used in aquatic life water quality screen (dilution type WLA):

Streams:

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$$\text{WLA a,c,h} = \frac{\text{Cr}}{\text{Dilution Factor}} - \frac{(\text{Fs} \times \text{Qrc} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Static water bodies (in the absence of a site specific dilution):

Discharge from a pipe:

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.8) \text{ Pw } \pi^{1/2}}{\text{Pf}}$$

$$\text{Critical Dilution} = \frac{(2.38) (\text{Pw}^{1/2})}{(\text{Pf})^{1/2}}$$

$$\text{WLA} = \frac{(\text{Cr}-\text{Cu}) \text{ Pf}}{(2.8) \text{ Pw } \pi^{1/2}}$$

$$\text{WLA} = \frac{(\text{Cr}-\text{Cu}) \text{ Pf}^{1/2}}{2.38 \text{ Pw}^{1/2}}$$

Formulas used in human health water quality screen, human health non-carcinogens (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{\text{Qe}}{(\text{Qrc} \times 0.6463 + \text{Qe})}$$

$$\text{WLA a,c,h} = \frac{\text{Cr}}{\text{Dilution Factor}} - \frac{(\text{Qrc} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Formulas used in human health water quality screen, human health carcinogens (dilution type WLA):

$$\text{Dilution Factor} = \frac{\text{Qe}}{(\text{Qrh} \times 0.6463 + \text{Qe})}$$

$$\text{WLA a,c,h} = \frac{\text{Cr}}{\text{Dilution Factor}} - \frac{(\text{Qrh} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Static water bodies in the absence of a site specific dilution (human health carcinogens and human health non-carcinogens):

Discharge from a pipe:

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.8) \text{ Pw } \pi^{1/2}}{\text{Pf}}$$

$$\text{Critical Dilution} = \frac{(2.38) (\text{Pw}^{1/2})}{(\text{Pf})^{1/2}}$$

$$\text{WLA} = \frac{(\text{Cr}-\text{Cu}) \text{ Pf}^*}{(2.8) \text{ Pw } \pi^{1/2}}$$

$$\text{WLA} = \frac{(\text{Cr}-\text{Cu}) \text{ Pf}^{1/2}*}{2.38 \text{ Pw}^{1/2}}$$

\* Pf is set equal to the mixing zone distance specified in LAC 33:IX.1115 for the static water body type, i.e., lake, estuary, Gulf of Mexico, etc.

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If a site specific dilution is used, WLA are calculated by subtracting Cu from Cr and dividing by the site specific dilution for human health and aquatic life criteria.

$$WLA = \frac{(Cr - Cu)}{\text{site specific dilution}}$$

## Longterm Average Calculations:

$$LTAA = WLAa \times 0.32$$

$$LTAc = WLAc \times 0.53$$

$$LTAh = WLAh$$

## WQBL Calculations:

Select most limiting LTA to calculate daily max and monthly avg WQBL

If aquatic life LTA is more limiting:

$$\text{Daily Maximum} = \text{Min}(LTAA, LTAc) \times 3.11$$

$$\text{Monthly Average} = \text{Min}(LTAc, LTAh) \times 1.31$$

If human health LTA is more limiting:

$$\text{Daily Maximum} = LTAh \times 2.38$$

$$\text{Monthly Average} = LTAh$$

## Mass Balance Formulas:

$$\text{mass (lbs/day)}: (\text{ug/L}) \times 1/1000 \times (\text{flow, MGD}) \times 8.34 = \text{lbs/day}$$

$$\text{concentration(ug/L)}: \frac{\text{lbs/day}}{(\text{flow, MGD}) \times 8.34 \times 1/1000} = \text{ug/L}$$

The following is an explanation of the references in the spreadsheet.

- (\*1) Parameter being screened.
- (\*2) Instream concentration for the parameter being screened in ug/L. In the absence of accurate supporting data, the instream concentration is assumed to be zero (0).
- (\*3) Monthly average effluent or technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (\*4) Daily maximum technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (\*5) Minimum analytical Quantification Levels (MQL's). Established in a letter dated January 27, 1994 from Wren Stenger of EPA Region 6 to Kilren Vidrine of LDEQ and from the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". The applicant must test for the parameter at a level at least as sensitive as the specified MQL. If this is not done, the MQL becomes the application value for screening purposes if the pollutant is suspected to be present



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on-site and/or in the waste stream. Units are in ug/l or lbs/day depending on the units of the effluent data.

- (\*6) States whether effluent data is based on 95th percentile estimation. A "1" indicates that a 95th percentile approximation is being used, a "0" indicates that no 95th percentile approximation is being used.
- (\*7) 95th percentile approximation multiplier (2.13). The constant, 2.13, was established in memorandum of understanding dated October 8, 1991 from Jack Ferguson of Region 6 to Jesse Chang of LDEQ and included in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". This value is screened against effluent Water Quality Based Limits established in columns (\*18) - (\*21). Units are in ug/l or lbs/day depending on the units of the measured effluent data.
- (\*8) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, acute criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness Dependent Criteria:

<u>Metal</u>	<u>Formula</u>
Cadmium	$e^{(1.1280 \ln(\text{hardness})) - 1.6774}$
Chromium III	$e^{(0.8190 \ln(\text{hardness})) + 3.6880}$
Copper	$e^{(0.9422 \ln(\text{hardness})) - 1.3884}$
Lead	$e^{(1.2730 \ln(\text{hardness})) - 1.4600}$
Nickel	$e^{(0.8460 \ln(\text{hardness})) + 3.3612}$
Zinc	$e^{(0.8473 \ln(\text{hardness})) + 0.8604}$

Dissolved to Total Metal Multipliers for Freshwater Streams (TSS dependent):

<u>Metal</u>	<u>Multiplier</u>
Arsenic	$1 + 0.48 \times \text{TSS}^{-0.73} \times \text{TSS}$
Cadmium	$1 + 4.00 \times \text{TSS}^{-1.13} \times \text{TSS}$
Chromium III	$1 + 3.36 \times \text{TSS}^{-0.93} \times \text{TSS}$
Copper	$1 + 1.04 \times \text{TSS}^{-0.74} \times \text{TSS}$
Lead	$1 + 2.80 \times \text{TSS}^{-0.80} \times \text{TSS}$
Mercury	$1 + 2.90 \times \text{TSS}^{-1.14} \times \text{TSS}$
Nickel	$1 + 0.49 \times \text{TSS}^{-0.57} \times \text{TSS}$
Zinc	$1 + 1.25 \times \text{TSS}^{-0.70} \times \text{TSS}$

Dissolved to Total Metal Multipliers for Marine Environments (TSS dependent):

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<u>Metal</u>	<u>Multiplier</u>
Copper	$1 + (10^{4.86} \times \text{TSS}^{-0.72} \times \text{TSS}) \times 10^{-6}$
Lead	$1 + (10^{6.06} \times \text{TSS}^{-0.85} \times \text{TSS}) \times 10^{-6}$
Zinc	$1 + (10^{5.36} \times \text{TSS}^{-0.52} \times \text{TSS}) \times 10^{-6}$

If a metal does not have multiplier listed above, then the dissolved to total metal multiplier shall be 1.

- (\*9) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, chronic criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness dependent criteria:

<u>Metal</u>	<u>Formula</u>
Cadmium	$e^{(0.7852(\ln(\text{hardness})) - 3.4900)}$
Chromium III	$e^{(0.8473(\ln(\text{hardness})) + 0.7614)}$
Copper	$e^{(0.8545(\ln(\text{hardness})) - 1.3860)}$
Lead	$e^{(1.2730(\ln(\text{hardness})) - 4.7050)}$
Nickel	$e^{(0.8460(\ln(\text{hardness})) + 1.1645)}$
Zinc	$e^{(0.8473(\ln(\text{hardness})) + 0.7614)}$

Dissolved to total metal multiplier formulas are the same as (\*8), acute numerical criteria for aquatic life protection.

- (\*10) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, human health protection, drinking water supply (HHDW), non-drinking water supply criteria (HHNDW), or human health non-primary contact recreation (HHNPCR) (whichever is applicable). A DEQ and EPA approved Use Attainability Analysis is required before HHNPCR is used, e.g., Monte Sano Bayou. Units are specified.
- (\*11) C if screened and carcinogenic. If a parameter is being screened and is carcinogenic a "C" will appear in this column.
- (\*12) Wasteload Allocation for acute aquatic criteria (WLAA). Dilution type WLAA is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the acute aquatic numerical criteria for that parameter. Units are in ug/L.

Dilution WLAA formulas for streams:

$$\text{WLAA} = (\text{Cr/Dilution Factor}) - \frac{(\text{Fs} \times \text{Qrc} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Qe

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Dilution WLAA formulas for static water bodies:

$$WLAA = (Cr - Cu) / \text{Dilution Factor}$$

Cr represents aquatic acute numerical criteria from column (\*8).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*13) Wasteload Allocation for chronic aquatic criteria (WLAc). Dilution type WLAc is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the chronic aquatic numerical criteria for that parameter. Units are in ug/L.

Dilution WLAc formula:

$$WLAc = (Cr / \text{Dilution Factor}) - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAc formulas for static water bodies:

$$WLAc = (Cr - Cu) / \text{Dilution Factor}$$

Cr represents aquatic chronic numerical criteria from column (\*9).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*14) Wasteload Allocation for human health criteria (WLAh). Dilution type WLAh is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the human health numerical criteria for that parameter. Units are in ug/L. Dilution

WLAh formula:

$$WLAh = (Cr / \text{Dilution Factor}) - \frac{(Fs \times Qrc, Qrh \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAh formulas for static water bodies:

$$WLAh = (Cr - Cu) / \text{Dilution Factor}$$

Cr represents human health numerical criteria from column (\*10).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*15) Long Term Average for aquatic numerical criteria (LTAA). WLAA numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.32.  $WLAA \times 0.32 = LTAA$ .

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*16) Long Term Average for chronic numerical criteria (LTAc). WLAc numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.53.  $WLAc \times 0.53 = LTAc$ .

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*17) Long Term Average for human health numerical criteria (LTAh). WLAh numbers are multiplied by a multiplier specified in the "Permitting

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Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 1.  $WLAC \times 1 = LTAh$ .

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*18) Limiting Acute, Chronic or Human Health LTA's. The most limiting LTA is placed in this column. Units are consistent with the WLA calculation. If standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then the type of limit, Aquatic or Human Health (HH), is indicated.
- (\*19) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 1.31 to determine the average WQBL ( $LTA_{\text{limiting aquatic}} \times 1.31 = WQBL_{\text{monthly average}}$ ). If human health criteria was the most limiting criteria then  $LTAh = WQBL_{\text{monthly average}}$ . If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the chronic aquatic life criteria shall appear in this column depending on which is more limiting.
- (\*20) End of pipe Water Quality Based Limit (WQBL) daily maximum in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 3.11 to determine the daily maximum WQBL ( $LTA_{\text{limiting aquatic}} \times 3.11 = WQBL_{\text{daily max}}$ ). If human health criteria was the most limiting criteria then  $LTAh$  is multiplied by 2.38 to determine the daily maximum WQBL ( $LTA_{\text{limiting aquatic}} \times 2.38 = WQBL_{\text{daily max}}$ ).  
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the acute aquatic life criteria shall appear in this column depending on which is more limiting.
- (\*21) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. The mass limit is determined by using the mass balance equations above. Monthly average WQBL,  $ug/l/1000 \times \text{facility flow, MGD} \times 8.34 = \text{monthly average WQBL, lbs/day}$ .
- (\*22) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. Mass limit is determined by using the mass balance equations above. Daily maximum WQBL,  $ug/l/1000 \times \text{facility flow, MGD} \times 8.34 = \text{daily maximum WQBL, lbs/day}$ .
- (\*23) Indicates whether the screened effluent value(s) need water quality based limits for the parameter of concern. A "yes" indicates that a water quality based limit is needed in the permit; a "no" indicates the reverse.

## APPENDIX C

6/8/2007

AMCOL HEALTH & BEAUTY SOLUTIONS  
PERCENTILE CALCULATIONS FOR TDS  
LA0108936, AI No. 40486

OUTFALL 002 TDS (mg/L)					OUTFALL 003 TDS (mg/L)				
	Sample Value (SV)	Mean (M)	(SV-M)	(SV-M)^2		Sample Value (SV)	Mean (M)	(SV-M)	(SV-M)^2
2005									
Jan	886	679.64	206.36	42584.4496		183	186.95	-3.95	15.6025
Feb	1600	679.64	920.36	847062.53		196	186.95	9.05	81.9025
Mar	199	679.64	-480.64	231014.81		206	186.95	19.05	362.9025
Apr	1230	679.64	550.36	302896.13		200	186.95	13.05	170.3025
May	923	679.64	243.36	59224.0896		204	186.95	17.05	290.7025
June	0	0	0	0		0	0	0	0
Jul	658	679.64	-21.64	468.2896		187	186.95	0.05	0.0025
Aug	793	679.64	113.36	12850.4896		192	186.95	5.05	25.5025
Sept	561	679.64	-118.64	14075.4496		215	186.95	28.05	786.8025
Oct	668	679.64	-11.64	135.4896		181	186.95	-5.95	35.4025
Nov	0	0	0	0		0	0	0	0
Dec	544	679.64	-135.64	18398.2096		208	186.95	21.05	443.1025
2006									
Jan	629	679.64	-50.64	2564.4096		175	186.95	-11.95	142.8025
Feb	472	679.64	-207.64	43114.3696		192	186.95	5.05	25.5025
Mar	541	679.64	-138.64	19221.0496		160	186.95	-26.95	726.3025
April	533	679.64	-146.64	21503.2896		174	186.95	-12.95	167.7025
May	507	679.64	-172.64	29804.5696		195	186.95	8.05	64.8025
June	677	679.64	-2.64	6.9696		179	186.95	-7.95	63.2025
July	627	679.64	-52.64	2770.9696		171	186.95	-15.95	254.4025
Aug	549	679.64	-130.64	17066.8096		192	186.95	5.05	25.5025
Sept	678	679.64	-1.64	2.6896		157	186.95	-29.95	897.0025
Oct	580	679.64	-99.64	9928.1296		180	186.95	-6.95	48.3025
Nov	666	679.64	-13.64	185.0496		224	186.95	37.05	1372.7025
Dec	431	679.64	-248.64	61821.8496		142	186.95	-44.95	2020.5025
Number =	22				22				
Total =	14952		-0.08	1736701.09	4113		0.1	8020.96	
Mean =	679.64				186.95				
Variance	82700.05				381.95				
St.Dev.	288				20				
95%, Zo = 1.645		Xo = 1,154 mg/L			Xo = 220 mg/L				
99%, Zo = 2.33		Xo = 1,351 mg/L			Xo = 234 mg/L				

Zo = (Xo - Mean)/St. Dev.

## APPENDIX D

## PART 1

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## EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning the effective date and lasting through the expiration date the permittee is authorized to discharge from:

Outfall 001, the batch discharge of treated process wastewater, treated process area stormwater, and treated laboratory wastewater (estimated flow is 0.021 MGD).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic		Discharge Limitations				Monitoring Requirements	
CONVENTIONAL AND NONCONVENTIONAL	STORET Code	Other Units (lbs/day, UNLESS STATED) (mg/L, UNLESS STATED)				Measurement Frequency(*)	Sample Type
		Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow-MGD	30050	Report	Report	---	----	1/month	Estimate
MGD,	00310	4.2	11.2	---	---	1/month	Grab
TSS	00530	7.0	22.8	---	---	1/month	Grab
pH Minimum/Maximum Values (Standard Units)	00400	6.0 (*2) (Min)	9.0 (*2) (Max)	---	---	1/month	Grab
<b><u>VOLATILE COMPOUNDS(*3)</u></b>							
Acrylonitrile	34215	0.017	0.042	---	---	1/6 months	Grab
Benzene	34030	0.006	0.024	---	---	1/6 months	Grab
Carbon Tetrachloride	32102	0.003	0.007	---	---	1/6 months	Grab
Chlorobenzene	34301	0.003	0.005	---	---	1/6 months	Grab
Chloroethane	34311	0.018	0.047	---	---	1/6 months	Grab
Chloroform	32106	0.004	0.008	---	---	1/6 months	Grab
1,1-Dichloroethane	34496	0.004	0.010	---	---	1/6 months	Grab
1,2-Dichloroethane	34531	0.012	0.037	---	---	1/6 months	Grab
1,1-Dichloroethylene	34501	0.003	0.004	---	---	1/6 months	Grab
1,2-trans-Dichloroethylene	34546	0.004	0.009	---	---	1/6 months	Grab
1,2-Dichloropropane	34541	0.027	0.040	---	---	1/6 months	Grab
1,3-Dichloropropylene	34561	0.005	0.008	---	---	1/6 months	Grab
Ethylbenzene	34371	0.006	0.019	---	---	1/6 months	Grab
Methyl Chloride	34418	0.015	0.033	---	---	1/6 months	Grab
Methylene Chloride	34423	0.007	0.016	---	---	1/6 months	Grab
Tetrachloroethylene	34475	0.004	0.010	---	---	1/6 months	Grab
Toluene	34010	0.005	0.014	---	---	1/6 months	Grab
1,1,1-Trichloroethane	34506	0.004	0.009	---	---	1/6 months	Grab
1,1,2-Trichloroethane	34511	0.004	0.009	---	---	1/6 months	Grab
Trichloroethylene	39180	0.004	0.009	---	---	1/6 months	Grab
Toluene	34010	0.005	0.014	---	---	1/6 months	Grab
1,1,1-Trichloroethane	34506	0.004	0.009	---	---	1/6 months	Grab
1,1,2-Trichloroethane	34511	0.004	0.009	---	---	1/6 months	Grab
Trichloroethylene	39180	0.004	0.009	---	---	1/6 months	Grab
Vinyl Chloride	39175	0.018	0.047	---	---	1/6 months	Grab
<b><u>ACID COMPOUNDS(*3)</u></b>							
2-Chlorophenol	34586	0.005	0.017	---	---	1/6 months	Grab
2,4-Dichlorophenol	34601	0.007	0.020	---	---	1/6 months	Grab
2,4-Dimethylphenol	34606	0.003	0.006	---	---	1/6 months	Grab
4,6-Dinitro-o-Cresol	34657	0.014	0.049	---	---	1/6 months	Grab
2,4-Dinitrophenol	34616	0.012	0.022	---	---	1/6 months	Grab
2-Nitrophenol	34591	0.007	0.012	---	---	1/6 months	Grab
4-Nitrophenol	34646	0.013	0.022	---	---	1/6 months	Grab
Phenol	34694	0.003	0.005	---	---	1/6 months	Grab



## PART 1

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## EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 001 continued)

Effluent Characteristic	STORET Code	Discharge Limitations				Monitoring Requirements	
		(lbs/day, UNLESS STATED)		Other Units (ug/L, UNLESS STATED)		Measurement Frequency	Sample Type
		Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
<b>BASE NEUTRAL COMPOUNDS(*3)</b>							
Acenaphthene	34205	0.004	0.010	---	---	1/6 months	Grab
Acenaphthylene	34200	0.004	0.010	---	---	1/6 months	Grab
Anthracene	34220	0.004	0.010	---	---	1/6 months	Grab
Benzo(a)anthracene	34526	0.004	0.010	---	---	1/6 months	Grab
Benzo(a)pyrene	34267	0.004	0.011	---	---	1/6 months	Grab
3,4-Benzofluoranthene	34230	0.004	0.011	---	---	1/6 months	Grab
Benzo(k)fluoranthene	34242	0.004	0.010	---	---	1/6 months	Grab
Bis(2-ethylhexyl)phthalate	39100	0.018	0.049	---	---	1/6 months	Grab
Chrysene	34320	0.004	0.010	---	---	1/6 months	Grab
1,2-Dichlorobenzene	34536	0.013	0.029	---	---	1/6 months	Grab
1,3-Dichlorobenzene	34566	0.005	0.008	---	---	1/6 months	Grab
1,4-Dichlorobenzene	34571	0.003	0.005	---	---	1/6 months	Grab
Diethyl phthalate	34336	0.014	0.036	---	---	1/6 months	Grab
Dimethyl phthalate	34341	0.003	0.008	---	---	1/6 months	Grab
Di-n-butyl phthalate	39110	0.005	0.010	---	---	1/6 months	Grab
Fluoranthene	34376	0.004	0.012	---	---	1/6 months	Grab
Fluorene	34381	0.004	0.010	---	---	1/6 months	Grab
Hexachlorobenzene	39700	0.003	0.005	---	---	1/6 months	Grab
Hexachlorobutadiene	34391	0.004	0.009	---	---	1/6 months	Grab
Hexachloroethane	34396	0.004	0.009	---	---	1/6 months	Grab
Naphthalene	34696	0.004	0.010	---	---	1/6 months	Grab
Nitrobenzene	34447	0.005	0.012	---	---	1/6 months	Grab
Phenanthrene	34461	0.004	0.010	---	---	1/6 months	Grab
Pyrene	34469	0.004	0.012	---	---	1/6 months	Grab
1,2,4-Trichlorobenzene	34551	0.012	0.025	---	---	1/6 months	Grab

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location:  
Outfall 001, at the point of discharge from the holding tank prior to combining with other waters.

**FOOTNOTES:**

(\*1) When discharging

(\*2) The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured.

(\*3) See Part II.E.

## PART I

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## EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

During the period beginning the effective date and lasting through the expiration date the permittee is authorized to discharge from:

Outfall 002, intermittent discharge of cooling tower blowdown (estimated flow is 0.0072 MGD).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	STOREY Code	Discharge Limitations				Monitoring Requirements	
		(lbs/day, UNLESS STATED)		Other Units (mg/L, UNLESS STATED)		Measurement Frequency	Sample Type
		Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow-MGD	50050	Report	Report	---	---	1/month	Grab
TOC	00680	---	---	---	50	1/month	Grab
Oil and Grease	00536	---	---	--	15	1/month	Grab
Total Dissolved Solids(*1)	03582	---	---	---	Report	1/month	Grab
Temperature(*2)	00011	---	---	---	Report(*3)	1/month	Grab
pH Minimum/Maximum Values (Standard Units)	00400	---	---	6.0 (*4)	9.0 (*4)	1/month	Grab

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location:

Outfall 002, at the point of discharge from the internal storm drain system near the limestone drive prior to combining with other waters.

FOOTNOTES:

- (\*1) Future evaluation of the concentration of total dissolved solids discharged in cooling tower blowdown may indicate that a numerical effluent permit limitation is required. Therefore, the permittee is hereby advised that a future total dissolved solids numerical limitation may be required if total dissolved solids are found to cause in-stream concentrations to exceed water quality criterion.
- (\*2) Future water quality studies may require temperature limitations for cooling tower blowdown. If such a limitation were imposed, the permittee would be required to reduce the temperature of the effluent prior to discharge.
- (\*3) Instantaneous maximum.
- (\*4) The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured.

## PART I

Page 5 of 5  
Permit No. LA0108936

## EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

During the period beginning the effective date and lasting through the expiration date the permittee is authorized to discharge from:

Outfall 003, intermittent discharge of once through non-contact cooling water and once through non-contact boiler steam condensate (estimated flow is 0.093 MGD).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	STORET Code	Discharge Limitations				Monitoring Requirements	
		Other Units (lbs/day, UNLESS STATED) (mg/L, UNLESS STATED)				Measurement Frequency	Sample Type
		Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow-MGD	50050	Report	Report	---	---	1/month	Grab
Total Dissolved Solids(*1)	70296	---	---	---	Report	1/month	Grab
Temperature(*2)	00011	---	---	---	Report(*3)	1/month	Grab
Visible Sheen(*4)	84066	---	---	None	None	1/month	Grab
pH Minimum/Maximum Values (Standard Units)	00400	---	---	6.0 (*5)	9.0 (*5)	1/month	Grab

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location:

Outfall 003, at the point of discharge from the internal storm drain system near Laser Lane prior to combining with other waters.

## FOOTNOTE:

(\*1) Future evaluation of the concentration of total dissolved solids discharged in boiler steam condensate may indicate that a numerical effluent permit limitation is required. Therefore, the permittee is hereby advised that a future total dissolved solids numerical limitation may be required if total dissolved solids are found to cause in-stream concentrations to exceed water quality criterion.

(\*2) Future water quality studies may require temperature limitation for once through non-contact cooling water. If such a limitation were imposed, the permittee would be required to reduce the temperature of the effluent prior to discharge.

(\*3) Instantaneous maximum.

(\*4) Visual observation shall be made once per month and the presence or absence of a sheen recorded. The number of exceedences and the total number of observations shall be reported on a Discharge Monitoring Report (DMR) annually.

(\*5) The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured.

Invoice No. \_\_\_\_\_

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June 8, 2007

LOUISIANA WATER POLLUTION CONTROL FEE SYSTEM  
RATING WORKSHEET

PERMIT NO. LA0108936 AI NO. 40486 ACTIVITY NO. PER20040001

1. Company Name: AMCOL Health & Beauty Solutions, Inc.  
Facility Name: \_\_\_\_\_  
301 Laser Lane  
2. Local Mailing Address: Lafayette, Louisiana 70507  
3. Billing Address (If different): \_\_\_\_\_  
4. Facility Location: 301 Laser Lane  
Parish: Lafayette  
5. Facility Type: Acrylate copolymers manufacturing facility  
Treatment Process Used: \_\_\_\_\_  
6. Products Produced: \_\_\_\_\_  
Raw materials stored or used: \_\_\_\_\_  
By-products produced: \_\_\_\_\_  
7. Primary SIC Code: 2821  
Other SIC Codes: \_\_\_\_\_  
8. Fac. Manager: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
9. Owner: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
10. Env. Contact: Stacey Jolet  
Telephone: (337) 354-1040 ext. 1067  
11. NPDES/LPDES Permit No. LA0108936  
Effective Date: 10/01/1999  
Expiration Date: 09/30/2004  
001-process ww, process area sw, process area washdown, and lab ww; 002-cooling tower blowdown; and 003-once-through non-contact cooling water and once-through non-contact boiler steam condensate  
12. Number and ID of Outfalls: \_\_\_\_\_  
13. Number of Injection Wells: \_\_\_\_\_  
14. Water Source(s): \_\_\_\_\_  
an industrial drainage ditch, thence to an unnamed coulee, thence to Francois Coulee, thence to the Vermilion River  
15. Receiving Water(s): \_\_\_\_\_  
16. River Basin: Vermilion-Teche  
Subsegment Number: 060801  
17. Federal Tax ID Number: \_\_\_\_\_  
18. Rater: sl

TOTAL RATING POINTS: 55.4